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Incorporating Lessons Learned into the Army Competency Assessment Prototype

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Human Resources Research Organization

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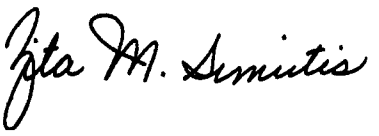

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14. ABSTRACT *(Maximum 200 words)*:

The PerformM21 research project addressed the Army's need to adapt to the requirements of operations in the 21st century. The *Incorporating Lessons Learned into the Army Competency Assessment Prototype* (Lessons Learned) analyses is a subpart of the PerformM21 work and is discussed in this report. Specifically, Lessons Learned is concerned with incorporating tasks and knowledges that emerged from recent deployments into the standard Army-wide Common Tasks hierarchy. To this end, a prototype job analysis survey and test blueprint were developed, resulting in a process that is transportable to an operational program. Lessons learned sources were located, and challenges noted with them were discussed (e.g., locating Army-approved doctrine). Finally, new items were developed based on this lessons learned content. These items, with further review and modification, could be used in an operational assessment.

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Finally, we would like to acknowledge the Soldiers who provided their time to participate in this research.

INCORPORATING LESSONS LEARNED INTO THE ARMY COMPETENCY ASSESSMENT PROTOTYPE

EXECUTIVE SUMMARY

Research Requirement:

The Army is changing to meet the needs of the 21st century, which requires that all Soldiers possess the knowledge, skills, and other attributes (KSAs) that will enable them to perform effectively in complex technical environments, under multiple and changing mission requirements, and in semi-autonomous, widely dispersed teams. The Army needs an integrated Soldier assessment system to support these changes, and the PerformM21 project is an attempt to answer this call. The Lessons Learned project is part of the larger PerformM21 body of work that was undertaken to show how lessons learned from new deployments can be incorporated into the existing Army-wide Common Tasks structure.

Procedure:

This 10-month project began with the identification of doctrinal and training sources of lessons learned in Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF). Initially these sources provided the basis of knowledges and tasks used in a job analysis survey targeting the performance of E4 Soldiers ready for promotion to E5. Based on a review of job analysis research, scales were developed, and the survey was administered to 53 E4 Soldiers and 22 non-commissioned officers (NCOs). The results of the survey were used to develop a prototype test blueprint that incorporates current, Army-wide Common Tasks with "lessons learned" knowledges and tasks. The sources of lessons learned subsequently served as reference material for new item content.

Findings:

The product of this research is the process used to locate and integrate lessons learned from recent deployments with existing Army common tasks. A number of sources were identified for lessons learned content, but there were challenges including locating (a) actual doctrine as opposed to informal guides, and (b) information applicable across time and location. An operational program would require up-to-date doctrine, both for test developers and Soldiers. The survey proved to be an efficient way to analyze and combine feedback from a variety of Soldiers to create a prototype test blueprint. The survey permitted the development of Army-wide assessment items addressing these lessons learned that would otherwise be absent from the comprehensive competency assessment developed for the PerformM21 project.

Utilization and Dissemination of Findings:

The approach we took in locating lessons learned sources will be valuable to Army leaders who are considering an operational testing environment. The crux of the dilemma is information; how to get it, how to disseminate it, and how to ensure it is properly vetted doctrine. The survey development work is directly translatable into an operational program. We suggest collecting further

field input, but expect the changes to be fairly minor. In fact, collecting data from a larger sample would provide the Army with a reasonable working operational test blueprint.

INCORPORATING LESSONS LEARNED INTO THE ARMY COMPETENCY ASSESSMENT PROTOTYPE

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CHAPTER 1: INTRODUCTION AND OVERVIEW OF RESEARCH

The Army is changing to meet the needs of the 21st century. All Soldiers must possess the knowledge, skills, and other attributes (KSAs) that will enable them to perform effectively in complex technical environments, under multiple and changing mission requirements, and in semi-autonomous, widely dispersed teams. The Army needs an integrated Soldier assessment system to support these changes.

The PerformM21 project is attempting to answer the call through the development of Army-wide and military occupational specialty (MOS)-specific prototype assessments. The PerformM21 effort is driven by the vision of an integrated selection, assignment, and performance assessment system that (a) meets current and future force requirements; (b) is open to work and job changes; and (c) applies cost effective technologies for system maintenance, effectiveness, and use by commanders, personnel decision makers, trainers, and developers. Another influence is the need identified by the Army Training and Leader Development Panel (ATLDP) report of April 2002. In the report, recommendations were to provide Soldiers with self-assessment and institutional assessment of job performance capabilities. Furthermore, Army leadership and senior non-commissioned officers (NCOs) have placed emphasis on providing an assessment prototype in a timely manner to demonstrate commitment to the change and improvement process.

The PerformM21 project was conducted as a three-phase effort. In the first phase, researchers (a) examined historical issues associated with competency testing and identified 21st century solutions to these issues, (b) identified assessment alternatives, and (c) worked with senior NCOs across the Army to develop a prototype Army-wide knowledge assessment. In the second phase, researchers evaluated the prototype job knowledge assessment with data collections at a variety of Army installations, and developed prototype competency assessments for five MOS: 14E - Patriot Missile Operator/Maintainer, 19K - M1 Armor Crewman, 31B - Military Police, 63B - Wheeled Vehicle Mechanic, and 91W - Health Care Specialist. Phase III of the project provided recommendations on the feasibility of introducing a new Soldier assessment system based on the prototype Army-wide and MOS-specific test development and evaluation work. Included in this phase was cost analysis work that was designed to extrapolate from this effort to a larger system of Army-wide and MOS testing.

Since the initiation of the PerformM21 project, lessons learned from Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) have emerged. The PerformM21 Army Test Program Advisory Team (ATPAT), a group of senior NCOs who provide guidance and support to the PerformM21 researchers, encouraged the development of new assessment items to reflect these combat critical tasks and knowledges. Along with development of new items, of particular interest to us was the process by which new lessons learned tasks and knowledges would be incorporated into existing Army tasks and knowledges. This is not as straight-forward a process as it seems. Consider the following factors:

- From where, exactly, do these "lessons" come?
- Who is the final arbiter of a task or knowledge being declared a lesson learned?
- Many lessons are likely to be theater-specific.
- Some lessons might conflict with established Army doctrine.
- There is likely to be little established doctrine for these lessons to support item or training development.

This research was intended to complement the research from the PerformM21 project by addressing these and other issues. In carrying out this research, to be consistent with PerformM21, we focused on E4 Soldiers ready for promotion to E5.

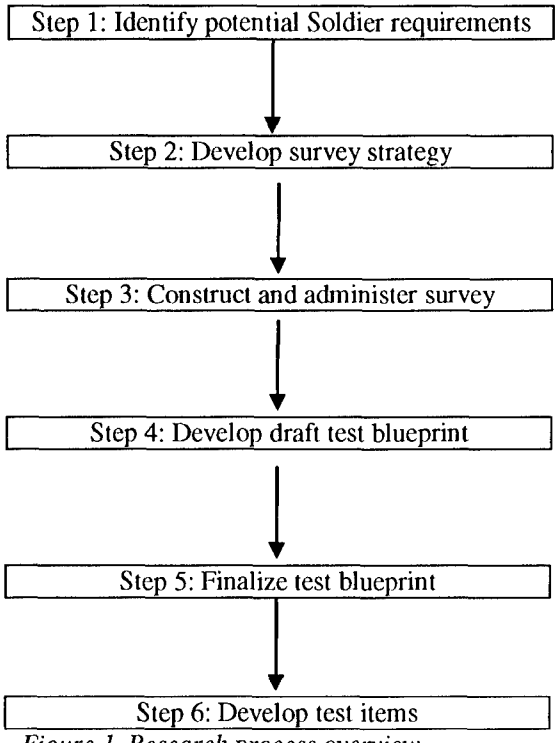


Figure 1. Research process overview

We accomplished the study by following the steps in Figure 1. We identified doctrinal and training sources of lessons learned in OIF/OEF, developed and conducted a knowledge and task survey, created a prototype test blueprint, and developed prototype test items. The remaining chapters describe these steps in more detail. Chapter 2 describes the process followed for completing the first step. It also discusses the issues we confronted, such as lack of doctrine, for official use only (FOUO) classification of many sources, and the theater-specificity of some of the lessons. The second through fifth steps are reviewed in Chapter 3. We discuss the issues the Army needs to consider when creating an operational job analysis survey both in general and to address emerging lessons learned. The sixth step is covered in Chapter 4. We used the sources of the lessons learned to develop new item content. Finally, Chapter 5 contains the summary of our findings in completing the work.

CHAPTER 2: IDENTIFICATION OF SOLDIER REQUIREMENTS

This chapter documents the developmental efforts to identify content for Soldier requirements evaluation focused on lessons learned from recent deployments. Four primary sources were incorporated, and a composite taxonomy was prepared. The goal was to develop a categorization that would support both near-term and long-term goals, including a Soldier job analysis survey and development of a test blueprint that would serve to support test development over several iterations. The discussion also considers the inherent problems in developing source documentation that is both current and lasting.

Sources for Lessons Learned

The purpose driving the Lessons Learned project was to develop a test that would reflect the realities of Soldier deployments, primarily those in support of Operation Iraqi Freedom (OIF) in Iraq and Operation Enduring Freedom (OEF) in Afghanistan. Performance and knowledge requirements were to be Army-wide; that is, not MOS, assignment, or unit specific. Additionally, the work was intended to supplement the earlier analysis and test development work that had been performed as part of the development of the Army-wide assessment in the earlier phases of the PerformM21 project (R.C. Campbell, Keenan, Moriarty, Knapp, & Heffner, 2004). That work produced both a task list and test blueprint that constitute a core list of performance and knowledge requirements as well as a battery of prototype test items. The content of the Army-wide task list was produced partially in response to guidance from then Sergeant Major of the Army (SMA) Tilley and reflects his direction that an Army test should include, in addition to common skills testing, evaluations of leadership and training skills, and knowledge of Army history, customs, and mores. As such, it differs from many other extant task lists, which are generally limited to common procedural areas and tasks. Because this task domain is essential to the Lessons Learned project, a synopsis of its content is provided in Appendix A.

Also in keeping with the tenets of the earlier work, the focus for the Lessons Learned project was targeted towards Soldiers at the senior E4 level being considered for advancement to paygrade E5. One goal of the project was to develop more prototype test items, but the procedure would follow the required steps of identifying and defining the performance domain, to be followed by blueprint development (based on survey input), and finally the actual development of items. In defining the Lessons Learned performance domain, there were four additional sources identified:

- Warrior Tasks and Battle Drills
- TRADOC-ARI Common Tasks Survey
- The Center for Army Lessons Learned (CALL)
- Policy, Command, and Authority

Warrior Tasks and Battle Drills

In September 2003, the new Army Chief of Staff (ACOS) initiated a review of Soldier preparation for the War on Terrorism. One of his concerns was that Soldiers have training on requisite tasks during initial entry training (IET) that would prepare them to be deployed

immediately following such training into combat situations. The initiative, called Task Force Soldier, involved the appointment of a Warrior Task Site Selection Board that included Active and Reserve Component officer and NCO subject matter experts (SMEs), government employees and contractors, and retired senior officers and NCOs. This Board considered a list of about 400 tasks derived from 97 MOS task lists and included those tasks required of Soldiers in Skill Level (SL) 1 (E1-E4), SL 2 (E5), and SL 3 (E6). Initially, the Board recommended the integration of 174 tasks into the Army-wide lists. This was eventually reduced to 39 tasks and 9 battle drills. The tasks are all individual Soldier performance requirements. Battle drills are collective requirements, involving the integrated performance of several Soldiers and usually with the incorporation of several individual tasks.

The process was completed in early 2004 and pilot implantation in IET started immediately. Although commonly referred to as "the 39 and 9," the Army Training and Doctrine Command (TRADOC) rejects the assignment of a finite number to the list and maintains that the Warrior Task list is a dynamic document, based on lessons learned that are being acquired out of the operational theaters, with both the content of the list and numbers of tasks and battle drills subject to change and revision. The current list is included in Appendix B.

Compounding the issue is that not all of the lessons learned-generated changes in IET are reflected in the Warrior Task and Battle Drills list. For example, in the spring of 2005, TRADOC completed a trial block of IET instruction based on the introduction of a new individual first aid kit. As a result, several "new" IET tasks were added:

- Employ the emergency trauma dressing (replaced the field dressing and pressure dressing training).
- Apply the combat application tourniquet (CAT).
- Apply the large-bore needle to a compressed lung casualty.
- Apply chest compression technique to a sucking chest wound.
- Transport a casualty.
- Apply life saving decision skills under fire.

Although it was the directive of the ACOS that the Warrior Tasks and Battle Drills be tasked to all Soldiers, it should be noted that as official policy, training on Warrior Tasks and Battle Drills stops upon completion of IET, and there is no requirement that the tasks be carried over to unit training or to post-assignment individual training. This identifies what many see as a disconnect between the Warrior Tasks and Battle Drills and other mandatory training requirements. This difference is manifested in the Common Task Test (CTT), which is the only doctrinally supported Army-wide statement of Soldier performance expectations. The 2006 CTT Task List is shown in Appendix C and reflects that about 56% of potential CTT Tasks share commonality with the Warrior Tasks and Battle Drills. This is actually a slight decrease from the 2005 CTT Task List in which there was about a 66% overlap of tasks (through Skill Level 2) with the Warrior list.

The Warrior Tasks and Battle Drills is a crucial source for the Lessons Learned project because of its prominence and Army emphasis in IET. However, it does have some limitations for this research, primarily because of its recency and limited training application. Many incumbents will not have experienced some of the tasks and drills included, even during

deployment. In addition, Army policy is that the list is subject to revision, using some of the same criteria that we used in the Lessons Learned project. Nonetheless, it is a fundamental source for the current work and was given significant weight in the final taxonomy considerations. All of the Tasks and Battle Drills are included in the final list.

TRADOC-ARI Common Tasks Survey

In 2004, TRADOC and the ARI Occupational Analysis Office (OAO) undertook an Army-wide survey to establish new training requirements for common tasks. The 2004 work updated a similar survey conducted in 1998 that involved an inventory of about 900 tasks. The 2004 effort sought to gather information and confirm common task requirements in light of current deployment and combat operations. The updated lists were based in part on Soldier observations and input into the Center for Army Lessons Learned (CALL). The purpose of the survey was to support updating and reorganization of most officer and enlisted professional development programs, including a revamping of the NCO Education System (NCOES). Of importance in this survey was the emphasis on obtaining participation from a wider respondent audience, particularly from Reserve Components.

The survey was targeted towards all ranks (enlisted, warrant, officer) in grades E2 through O6. Each group surveyed had its own task list. The survey sought to confirm the relevance of common task requirements by focusing on deployment experiences, asking: *"While deployed to Iraq/Afghanistan did/do you perform...."* Tasks were specific and organized into task categories. Appendix D contains a summary of the task categories for Skill Level 1 (E4) and Skill Level 2 (E5) Soldiers.

Of all of the sources directly accessed for the Lessons Learned project, this source is the most comprehensive with 21 categories and 276 tasks defined for Skill Level 1 and 12 categories and 142 tasks identified at Skill Level 2. Ostensibly at least, there is little, if any, overlap in tasks between the two Skill Levels.

The survey (which was voluntary and anonymous) was administered via the web and was completed in December 2004 with analysis slated to continue through July 2005. Although we were unable to obtain results to incorporate into the Lessons Learned project, we did utilize the task listings and task categories in our consideration of source input. We continue to track the analysis of this survey.

The Center for Army Lessons Learned (CALL)

The Center for Army Lessons Learned (CALL) is an organization of TRADOC's Combined Arms Center (CAC). The specific mission of CALL is to collect and analyze data and input from a variety of sources for both historical and operational purposes. CALL distributes this information in a variety of formats, including a website (http://call.army.mil).

Specific to this research, CALL is very active in acquiring and posting information from both OIF and OEF. This is mostly operational information, and as such, is in a restricted portion of the website that is not publicly accessible (For Official Use Only [FOUO]). No classified

information is included in the CALL website. Through the contracting officer representative (COR) and sponsor authorization, we were able to obtain access to restricted parts of the website for support of the Lessons Learned project. However, some information on the site is read-only; it cannot be copied, printed, downloaded, or saved.

The CALL website represents an unusually rich source of information as it pertains to lessons learned from recent deployments. Foremost, it is reflective of procedures that work and have been battle tested under operational conditions. It is the most relevant source for the project. It is also, for the most part, timely, reflecting very recent feedback from field forces. However, there are inherent challenges with the CALL information:

- Information on the CALL website is in a wide variety of formats and presentations: Newsletters, Smart Cards, Handbooks, After Action Reports (AAR), Graphic Training Aids (GTA), standing operating procedures (SOPs), briefing slides, monographs, videos, and training support materials. Much of the material is not "task-based" and takes the form of guidance, information, instruction, or "good-to-know" material for tactics, techniques, and procedures (TTP). Considerable work was required to extract information and organize it into a format suitable to serve as source material for this research.
- Much of the material is theater (area)-specific to either Iraq or Afghanistan and some is even area of operations (AO)-specific (e.g., 3rd Infantry Division, 1st Cavalry Division, Baghdad, Sunni triangle, Bagram). Some is operation-specific, for example, lessons learned in support of Phantom Fury, the U.S. Marine Corps assault on the strongholds of Fallujah. As a result, it is often difficult to determine how generalizable the information is, even within a theater.
- The criticality of the task or subject does not necessarily translate into appropriate test subject matter. For a Soldier operating in the mountains in Afghanistan, knowing the symptoms of high altitude sickness may be a life-saving knowledge, however testing this subject Army-wide would not likely be appropriate.
- Although the lessons learned information from the CALL resources is documented, much of the documentation is neither standardized nor available in standard training sources or readily available references for study and referral.
- Some of the information is mission, situational, or time sensitive. Opposition force tactics in both theaters have changed considerably over the past 24 months and will likely continue to evolve, as will the U.S. and Army mission and supporting tactics and tasks.
- Change is constant in this current-day operating environment. New information is constantly being added to the CALL website. Monitoring and adapting to lessons learned updates and additions is a persistent requirement.
- Any operational material extracted from the website was treated derivatively as For Official Use Only (FOUO) and handled accordingly, even if the information was available unrestricted from another source. None of the information in this report falls into that restricted category.

Project personnel with site access spent considerable time going through information on the website and organizing that information into a list that approximates a task list. Much of the data is information or knowledge that is necessary for Soldiers operating in the theater and no attempt was made to turn this into task statements. Other performance-based requirements are more task-based, but the CALL source mainly provides performance requirements and procedures without a uniform overlying or organizational taxonomy. Therefore, project personnel created a working edition. We should also point out that most CALL information is not Skill Level-specific or otherwise associated with Skill Level, and while no attempt was made to impose a Skill Level hierarchy, the organization of information was considered appropriate for the target test audience. A list of the categories, topical subject areas, and "tasks" is presented in Appendix E. The information included in Appendix E, while originating from the CALL website, is not of a sensitive nature.

The CALL source has the potential to be the most meaningful of all the sources investigated due to its relevancy and timeliness. However, it must be used carefully, particularly as a source to develop test items. The generalizability of the material must be established, as must its doctrinal accuracy and applicability. By way of demonstration of the potential pitfalls is the following example of a task to conduct a trauma assessment of wounded/injured person: The "standard" way to conduct, sequentially, trauma assessment is to remember the mnemonic "ABC" (airway, breathing, circulation). However, because of the nature of most casualty trauma in Iraq, the operational sequence applied there is "CAB" (circulation, airway, breathing). Both approaches are viable and doctrinally correct for their context but care must be taken when testing such a task.

Policy, Command, and Authority

The final source is a somewhat different resource than the previous discussions. It is used less to provide content and more as a means of interpreting, prioritizing, or emphasizing the tasks or other content gathered elsewhere. Army policy and the input of Army leaders and other specialized groups are also critical factors, especially in the current operating environment.

Throughout the project we have constantly sought Army reviewer input. We have used the ATPAT members as a group as well as sub-groups from the ATPAT for more targeted participation. The ATPAT is particularly important in this regard because of the wide range of constituencies, including emphasis on the Reserve Components, which it represents. In fact, in developing the test blueprint for the PerformM21 Army-wide common core exam, the ATPAT served as the entire resource including vetting (and changing) the tasks selected for test development.

Another source of input occurs when the PerformM21 project is briefed to high-level decision makers. They often provide guidance from a level that would normally not be available. For example, at a briefing presented to TRADOC, a high level flag officer offered that "Detainee Operations" was an extremely high level priority area in the Army, closely followed by "Cultural Awareness" and "Sexual Harassment." Moreover, he provided his rationale for his support of these topics. Such information not only makes the resulting test more relevant but also gives credibility to the role of testing as a means of enforcing and supporting Army policy and

concerns. Another example of supporting Army policy is in consideration of the Warrior Tasks and Battle Drills (the so-called "39/9"). Because we were aware of the emphasis of this source in the Army, and the desire to extend this to areas beyond IET, we gave higher priority to this range of tasks when actual test content decisions were made.

However, an equally important consideration to keep in mind when reacting to individuals' comments, suggestions, and priorities is that individuals do have their own personal issues, biases, and preferences, which may not reflect overall Army-wide interests or requirements. The potential for conflicting priorities exists, and the program cannot thoughtlessly react to each priority. It is therefore important to keep in place a system of checks and balances when utilizing this category of sources in making final testing decisions.

Nonetheless, to ignore the realities of command and partisan influence is to peril the credibility and acceptance of a testing program. It is critical that individuals and groups who review testing plans have access to all the data results, methodology, and other information that the development staff used. Then, if they provide reasoned, directed input to priorities and emphasis, it should be factored into the test plan.

Analysis and Consolidation of Source Material

Although cursory review of the various lists used in the Lessons Learned project might lead to the conclusion that they are disparate, detailed examination reveals considerable commonality and overlap. Much of the difference in the source lists is in the level of specificity or abstraction of the statements and in the way that requirements are aggregated. (For example, the task "Qualify with assigned weapon" is actually the same requirement as reflected in the three tasks "Engage targets with an M16 rifle," "Engage targets with an M9 pistol," and "Engage targets with an M4 carbine.) Task lists and task descriptions always present challenges. Critics of the proliferation of lists ask (with some justification) why a single list cannot be achieved. In fact, however, task lists are working documents, meant to be used as tools for a specific purpose rather than end products that exist for their own sake.

Analysis of the sources used in this work reveals that each of them was designed for a particular use. As such, direct application in another context is not entirely suitable as noted below:

- The Warrior Tasks and Battle Drills were designed to fit a training need for a very specific group: Soldiers coming out of IET who might be deployed directly to a combat theater. The developmental history of Warrior Tasks and Battle Drills shows a potentially much larger criticality domain with final structure being determined primarily on implementation exigencies. As such, in its current form, it only represents a small slice of the probable and intended zone of performance. Nonetheless, this source has high current visibility, has well-defined content, and is gaining acceptance and recognition in other Army-wide applications, principally the Common Task Test.
- The TRADOC-ARI survey task list was designed as a tool to support training emphasis decisions. It is deliberately comprehensive and specific. Ideally structured

for its use in a survey, it is too lengthy and cumbersome to use in its raw form. Post-survey analysis should winnow the list to a more manageable number and order of tasks. However, its comprehensiveness makes it a good standard to compare with other lists.

- The CALL website is a unique source. It is designed as a repository of materials used by operational units. It does not purport to be a doctrinal source of performance requirements and is not concerned with tasks per se. It is not comprehensive and, indeed, may not even be representative of the overall deployment requirements. It is a very raw source and, in its current form, largely unprocessed. However, it is the most germane to the focus of the Lessons Learned project because it is the only source that is generated directly from the field and deployment experiences. Used judiciously, it provides a rich contribution to the project, particularly in the phase when actual test items are developed. It is also a valuable source for generating new tasks and categories of tasks.
- The Army-wide prototype test developed as part of PerformM21 is characterized by the fact that it was the sole source that went beyond operational requirements and explored knowledges in areas of history, leadership, Army Values, and customs, and identified training knowledges. It, too, filled a specific requirement of reacting to an expressed need of the Army leadership.

The ultimate goal of reviewing the previously described sources was to develop a comprehensive taxonomy of tasks and knowledges to serve as the basis for a job analysis survey. This taxonomy was produced by iteratively reviewing, comparing, contrasting, and synthesizing the sources previously discussed. Development of the list involved the following considerations:

- The taxonomy would clearly distinguish between skills (tasks) and knowledges.
- Although having a lessons-learned focus, the taxonomy would be all-inclusive, not just focusing on deployment-oriented requirements.
- The tasks and knowledges needed to be abstracted to a level to be manageable and not present an onerous requirement to reviewers and survey respondents. Moreover, the primary use of the taxonomy was to support a test blueprint. As such, we deliberately avoided over-defining the tasks to facilitate long-term use of the instrument.
- In constructing performance or knowledge statements, the focus, where appropriate, was on identifying competencies rather than citing specific equipment or procedural parameters.
- Taxonomy categories (major classifications of tasks and knowledges) had to be a manageable number and have meaningful descriptors. Reviewers and raters would need to be able to understand and rate or rank at the category level. The sizes of the categories (numbers of tasks and knowledges) needed to be roughly equal.

Project staff synthesized the various sources into a preliminary list. Refinements were conducted by collaboration with subject experts and job taxonomy experts until a final list was

determined. The result (Appendix F) was 99 skill task areas in 9 categories and 23 knowledge areas in 4 categories.

Summary

No single task or performance requirements list is likely to meet all the diverse needs on uses for which such lists are normally employed. Moreover, no single list is going to be acceptable to all Army reviewers and critics, especially if those reviewers were not involved in the process. We recognize that there are many divergent priorities deserving emphasis and complete agreement on outcomes is not a reasonable expectation. Nonetheless, the process, if not the outcome, should be defensible and acceptable. Such was the approach used in identifying the domain for the Lessons Learned project. By accessing a number of recent and relatable sources, analyzing them, and integrating the results, we have worked to create a list that not only represents a reasonable performance domain but that also supports the target aims of the project: emphasizing skills and knowledges that support deployment operations in the current war climate.

At the same time, this approach to incorporating lessons learned material provokes caution and attention in the way that it is applied. Procedures derived from lessons learned can be idiosyncratic and temporary, often to be replaced by fresh, more contemporary procedures. The current operating environment, with ever-changing enemy composition and tactics, is particularly difficult to operationally define and stabilize. Moreover, the paradigm for Army training has shifted to one where doctrine is being defined and determined by forces in the field, rather than by traditional institutions and schoolhouse organizations. Facilitated by the Internet and special interest websites, word is spreading faster to interested users before it can be evaluated and documented by specialized doctrine reviewers. To remain consistent in light of shifting inputs, we have concentrated on identifying task or knowledge areas rather than specific techniques and procedures. In this approach, the generated Lessons Learned list should remain viable over a longer term.

The list of performance requirements in Appendix F is an interim product, designed to be modified based on survey results and other review input. It reflects the best approach to organizing information obtained from very credible and functional sources. This list should serve as a solid foundation on which to base test blueprint design activities.

CHAPTER 3: SURVEY AND BLUEPRINT DEVELOPMENT

Design Goals

Our ultimate goal was to construct a prototype survey that would support development of a common core test blueprint with several desirable features:

- Accurate reflection of Soldier job demands, particularly as they regard deployment requirements.
- Test blueprint categories that are maximally useful for test development.
- Test blueprint categories that are maximally useful for Soldier preparation and feedback.

The fundamental goal of an effective competency assessment program is the act of teaching to the test to result in improved job performance. Moreover, this feature should be evident to stakeholders. That is, Soldiers and their leaders should be able to look at a test or a test blueprint and perceive that it corresponds to field requirements, even though it is unlikely to strictly match the requirements of a given Soldier's current assignment. Accordingly, test content must reflect performance as it is defined by Soldiers in the field. The purpose of using a survey to collect input is to ensure that test specifications are not unduly influenced by the experiences of a relatively small number of Soldiers. In addition to being relevant, test content should be specified broadly enough to prevent Soldiers from preparing to be tested on a relatively small number of specific tasks. While such a test can be useful for supporting training activities, it is not likely to be reflective of a broad enough sampling of the job to conclude that high scorers are fully qualified to perform their jobs. This was a criticism of the old Skill Qualification Tests (SQTs) and is a feature of the Army's current Common Task Test. Thus, we opted for developing a prototype test blueprint that specifies *categories* of content rather than very specific tasks or knowledges.

Using broad categories of content also facilitates test development. The idea is that test developers can develop "banks" of items for each blueprint category. When constructing a new test form, the appropriate number of items for each category is sampled from the item bank. This allows quite a bit of latitude in item selection, making development of multiple forms with different items but comparable content feasible.

A test blueprint based on categories of content helps both test developers and examinees because the blueprint will not change dramatically from one test cycle to the next. Barring fundamental changes to the job, for example, a certain percentage of the test will always cover first aid related tasks and knowledges and this percentage is not likely to vary much from year to year. Certain tasks and knowledges will change over time, but this will not be evidenced in constant changes to the test blueprint, but rather to edits to the item bank to maintain its currency. This stability is in the best interests of test developers, trainers, and examinees.

The Army is interested in an assessment program that will provide useful performance feedback to Soldiers. This usually means calculating subtest (as well as total) scores on the test and reporting these back to examinees. For subscores to be informative, they should be based on

test items with related content (e.g., not mixing first aid and weapons items), and there should be enough items on the subtest to result in reliable scores. A subtest score based on 5 items sampled from the item bank, for example, is not going to be very reliable whereas a subtest score based on 15 or 20 items would likely be sufficiently reliable to be useful feedback.

A Working Process Model

The Army already has an occupational analysis program designed to identify training requirements, as described in TRADOC Regulation 350-70. Given the aforementioned goals for test design, however, occupational analysis surveys developed under that program do not provide the required information because their focus is on identifying Soldier training needs. Rather than design a completely new occupational analysis program that might be able to address the information requirements for both training and testing, the PerformM21 test program design recommendations suggest a model similar in concept to that used by the Air Force (see www.icodap.org). Specifically, the Air Force uses detailed task analysis surveys that are designed to identify training needs to and identify the critical tasks that will be considered for job-specific testing. Additional data to support development of a test blueprint are collected via a separate, smaller-scale "Test Importance Survey" that is administered only to supervisors. We envision the Army adopting a similar model, in which training-focused occupational analysis results are used to provide a starting point for identifying the content that should be included in smaller-scale test emphasis surveys (Knapp & Campbell, 2006).

Development of Blueprint/Survey Content Categories

A key question in determining survey content is to decide on the nature of the job descriptors that would best serve test design purposes. We have previously discussed the advantages of using a knowledge-based test blueprint as a foundation for a multiple-choice exam (Knapp & Campbell, 2006). Depending upon the nature of the job requirements, however, other choices might be more sensible. For a core Army examination, we believe that a primarily task-based focus, albeit, using task categories and less detailed constituent tasks than the Army uses for training applications, would be the most appropriate choice[1]. This is because our review of the PerformM21 common core test blueprint suggests that there is not a lot to be gained by this "conversion." Take first aid tasks as an example. Most Skill Level 1 Soldiers are expected to memorize what they are supposed to do rather than understand why they are doing a first aid task in a particular way. In such a case, asking about procedures (as would be easy to do from a task category based blueprint) would be as easy, or easier, than trying to infer an underlying knowledge base.

As discussed in Chapter 2, project staff developed task statements primarily from the latest Army training-oriented common task survey. There were, however, some knowledge areas that were viewed as important, but which would not naturally surface on a test based on the common tasks. As described in Chapter 2, these knowledge areas were identified primarily by our SMEs.

It was challenging to organize task and knowledge statements into completely satisfying categories. Creating categories that were homogeneous in content resulted in some

[1] Note that the type of task we discuss here does not meet TRADOC's definition of a "task" as it applies to their occupational analysis protocols (see TRADOC Regulation 350-70).

categories that were very large and others that were very small. As such, they were not suitable for our needs. We worked with SMEs to develop categories that were more even in size. This still resulted in a fairly large number of categories (13), so we organized those into five "meta-categories." The meta-categories are useful for getting a succinct "big picture" of what might be covered on a test and for obtaining holistic judgments about test coverage (see related discussion later in this chapter). Table 1 shows the nine task and four knowledge categories sorted into five meta-categories. Although it is likely that improvements can be made to this categorization scheme, we believe this set of categories brings the Army close to something that would be suitable for an operational common core test program.

Table 1. Survey Categories

Survey Categories		Number of Tasks/Knowledge Areas
Self Protection and Defense		35
First Aid, Preventive Medicine, and MEDEVAC	18	
NBC Protection and Decontamination	8	
Threat Identification and Reaction	9	
Individual Weapons, Communications, and Navigation		22
Navigation, Communication, Call for Fires	8	
Weapons, Grenades, Mines, and Demolitions	14	
Tactical Operations		34
Vehicle and Convoy Tactical Operations	9	
Force Protection, Crowd Control, Security, and Intelligence, Detainee Operations	13	
Urban Opertions, Camouflage, Fighting Positions	12	
Supervision		15
Supervise, Lead, and Train Others	8	
Leadership Procedures and Principles	7	
Army Rules and History		16
Rules, Regulations, Laws of Conduct	6	
Army Policies and Practices	6	
Army History, Customs, Values	4	

Survey Strategy

Choice of Respondents

Particularly at the E4 paygrade, we can expect incumbents to provide reasonably accurate information about what they do and how often they do it. We would not expect them to accurately judge what other E4 Soldiers do (especially when considering requirements across the Army), nor would we expect them to be the best judges of the knowledges, skills, and other attributes (KSAs) required for effective job performance. Moreover, we should carefully consider the limited perspective of most E4 Soldiers when asking them about the importance or criticality of the various things they do. In contrast, supervisors may be viewed as a preferred source for task importance and KSA information. This is particularly true for low skill occupations (as opposed to those in which incumbents are highly educated). Thus, we developed

an automated survey with branching characteristics that made it suitable for two types of respondents to provide input—incumbents (E4 Soldiers) and supervisors (E5-E8 NCOs).

Choice of Rating Scales

Our goal was to determine what rating scale(s) would yield the most reliable, comprehensive, and complete data maximally suitable for purposes of test design. We presumed the goal of complete data would be facilitated by using the least number of rating scales possible (thus reducing the time required to complete the survey), so we kept the number of scales to a minimum.

Standard Practices

Task inventories typically ask one or more of the following questions (e.g., Raymond, 2001):

- How important or significant is each task to your job?
- What are the consequences of error (task criticality)?
- How much time do you spend on each task?
- How frequently do you perform each task?
- How difficult is it to perform each task?

We collected examples of scales (questions and response options) from the literature, the other services, and our previous work with similar surveys.

The selection of rating scales should be determined based on what information is required in a given situation. Moreover, consideration should be given to whether different scales provide sufficiently unique information to warrant inclusion. For example, research suggests that time spent and frequency ratings tend to be fairly highly correlated regardless of job type (Friedman, 1990). The correlation between importance and criticality (consequences of errors) is usually also fairly high (Sanchez & Fraser, 1992), however, this can vary across job types. Often, if is necessary to obtain an overall indicator that incorporates several judgments about the task (e.g., performance frequency and importance). It is possible to get such an overall indicator either by statistically combining ratings on multiple scales or by asking raters to consider multiple factors (e.g., time spent, criticality) when making a single rating (Cornelius & Lyness, 1980).

Special Considerations

Some of the relatively unique issues associated with collecting job analysis ratings from military personnel are described below:

- Job requirements between garrison and combat settings may differ, with the differences being more or less pronounced depending on MOS (relates to the context in which respondents are asked to make their ratings).

- Reserve Component Soldiers may not have recent experience working in their MOS in a full-time capacity, so absolute frequency scales would not be meaningful for part-time respondents.
- Soldiers perform a mix of Army-wide and MOS-specific tasks. Use of relative scales (often preferred with the expectation they will show more variability than absolute scales) might reduce the comparability of ratings on Army-wide tasks collected from Soldiers in different MOS.

The Selected Rating Scales

Although this might not be true at higher paygrades, we would expect E4 Soldiers (incumbents) to be better able to describe what they do and how often they do it than to make other judgments about their job tasks (e.g., importance to mission or recommended test emphasis). We decided to have both incumbents and supervisors rate the tasks on a "time spent" scale. We considered several options for this scale, looking for something that would have a consistent absolute *and* interpretative meaning whether the incumbent is a full-time or part-time Soldier. We selected time spent rather than frequency for this reason and because we could use anchors with interval scale properties. The specific scale we used is shown in Figure 2.

In an operational survey, we are leaning toward recommending collection of only time spent or frequency data from E4 Soldiers, and then only if it serves as a reality check for a test blueprint that would be based primarily on test emphasis ratings from supervisors. For purposes of the Lessons Learned project survey, however, we collected data on both time spent and test emphasis from both incumbents and supervisors so that we could examine the correlation between the two scales and compare the ratings collected from incumbents and supervisors.

Just as the services often use a "training emphasis" rating rather than (or in addition to) the other questions that typically appear on task inventories, we used a "test emphasis" rating to collect information on both the tasks and knowledges listed on the survey (see Figure 2). This is similar to the "test importance" rating collected by the Air Force, although the instruction set and rating scales are different. We considered asking for ratings of both task importance and test emphasis, but expected the two judgments to be highly correlated and we wanted to keep survey administration time requirements to a minimum. Note that this single test emphasis rating uses the strategy described previously of asking respondents to consider several factors, then combining these into a single judgment.

We used 5-point scales (with a sixth "not applicable" option) primarily in an effort to simplify the rating activity for respondents. The rating scale anchors were worded to be relative judgments (i.e., comparing to other tasks or knowledges) rather than absolute judgments to encourage respondents to use the entire 5-point scale. We phrased the rating scale questions and scale anchors in the most equivalent manner possible to permit comparison for comparable questions across different respondent types (e.g., incumbents and supervisors).

- How much time do you ["Specialists/Corporals," for supervisors] spend performing this task compared to other tasks [knowledges]. Consider time spent during daily work, training, and deployment activities.

  0. None
  1. Very small amount
  2. Below average
  3. About average
  4. Slightly above average
  5. Above average

- How much should this task [or knowledge] be emphasized on a test for Specialists/Corporals competing for promotion to Sergeant? When considering your rating, think about these factors:
  - Time spent on task
  - Seriousness of errors
  - Importance to unit mission
  - Variability in ability to perform

  0. Do not include on test
  1. Much less emphasis on the test compared to other tasks [knowledges]
  2. Less emphasis on the test compared to other tasks [knowledges]
  3. About the same emphasis on the test compared to other tasks [knowledges]
  4. More emphasis on the test compared to other tasks [knowledges]
  5. Much more emphasis on the test compared to other tasks [knowledges]

Figure 2. Survey rating scales.

Occupational analysis survey designers will sometimes require respondents to rate all items (e.g., tasks) on one scale (e.g., time spent) before rating them on a second or third scale (e.g., importance). Although this might help raters focus on what judgment they are making, it makes the survey more time-consuming to complete. Thus, our survey was designed so that respondents rated each task on time spent and test emphasis before going to the next task. This is different than the Army's training surveys and may not be optimal from a research perspective, but it made the rating activity easier and quicker for respondents.

Holistic Weighting Exercise

We wanted to compare two strategies for determining how much emphasis to give various categories of test content. One strategy would be based on combining test emphasis ratings made on individual task and knowledge statements. The other strategy would require supervisors to make a direct judgment regarding the weight that should be given to each test category. We have successfully used this method for developing civilian certification test blueprints, and implement it by having survey respondents allocate 100 points across all possible content categories. As previously discussed, we thought that it would be too demanding to ask survey respondents to allocate points across 13 categories, so we had them do this exercise only for the 5 meta-categories.

Background and Reaction to Survey Questions

We developed questions for the survey to collect information from respondents that would help to evaluate the representativeness of the survey sample and allow for analysis of results by subgroups of interest (e.g., respondents who have been deployed compared to those who have not).

We gave considerable thought to the deployment experience questions as they have the potential to be informative for thinking about integrating lessons learned during recent deployments into the resulting test blueprint. It is also the case that being "deployed" can mean a number of things across different contexts. We looked at how other surveys handle questions about deployments and settled on an approach we devised to have respondents indicate the types of roles they filled during their deployment. These eight "roles" characterize different types of activities that Soldiers are required to perform that fall outside of their normal MOS responsibilities. It is our understanding that many Soldiers work outside their MOS while deployed, doing activities that are not necessarily associated with any other MOS. This information would be of general interest and could possibly factor into test blueprint decisions. These eight roles are detailed in a later section.

Finally, we developed questions to help evaluate how respondents felt about the survey. Questions concerned how easy or difficult it was to complete various parts of the survey.

Survey Construction[2]

Recognizing that Soldiers and NCOs are tasked with completing surveys all the time, we endeavored to make this survey as appealing and non-burdensome as possible. The survey was designed to be an automated, Internet-based survey. Additionally, the following qualities were desired:

- Pause feature – so respondents do not have to complete the entire survey in one setting.
- Branching feature – so incumbents and supervisors were branched to different versions of the survey (as previously noted), and so that Soldiers below paygrade E4 and above paygrade E8 were exited from the survey.
- Easy to navigate.
- Logical steps for some items – for instance, so that applied weights could not exceed 100.
- Easy for researchers to access the data.

We constructed the survey in-house using PHP scripting software.[3] We instructed respondents to create their own user name and password, and strongly encouraged them to select something easy to remember in case they wanted to pause the survey and come back to it later.

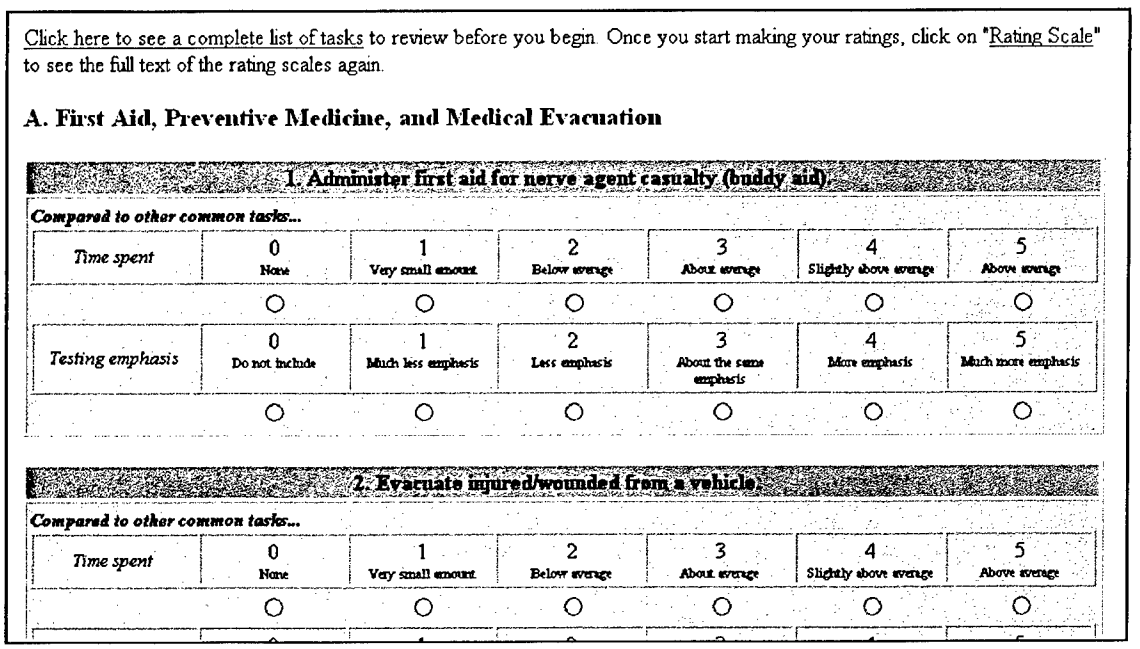
The survey was hosted on the HumRRO server. Because respondents were not known ahead of time, we were not able to restrict access to the site. For this research we do not consider this as much a security issue as a data integrity issue. None of the content on the survey was FOUO or required any clearance. Nor did we collect or store any personal identifiers (i.e., social

[2] Shelly West (HumRRO) was critical in the automation of this survey, both for her insight and technical capabilities.
[3] PHP originally stood for Personal Home Page, but now has come to mean PHP: Hypertext Preprocessor.

security numbers, names). Obviously any operational survey process that includes sensitive information – whether in survey content or respondent data – should restrict access to the site. The data integrity concerns result from having no way to prevent respondents from completing the survey multiple times, or from non-Soldiers completing the survey.

Survey Administration

Our goal was to have 150 Soldiers and 150 NCOs, representing both Active and Reserve Components, complete this survey. We did not have a list of potential respondents, however, nor were any units specifically tasked to complete the survey. Instead, we relied on the ATPAT to help us locate respondents. We asked them to forward an "advertisement" email down their chain of command, which some did. We also posted a notice on a commonly accessed NCO website (www.NCOTeam.org). By far the most successful tool for gaining respondents, however, was recruiting participants from the later FY05 PerformM21 Phase III MOS data collections. We asked data collectors to include this as an activity to be completed after the pilot tests.


Click here to see a complete list of tasks to review before you begin. Once you start making your ratings, click on "Rating Scale" to see the full text of the rating scales again.

A. First Aid, Preventive Medicine, and Medical Evacuation

1. Administer first aid for nerve agent casualty (buddy aid).

Compared to other common tasks...

	0	1	2	3	4	5
Time spent	None	Very small amount	Below average	About average	Slightly above average	Above average
	○	○	○	○	○	○
Testing emphasis	0 Do not include	1 Much less emphasis	2 Less emphasis	3 About the same emphasis	4 More emphasis	5 Much more emphasis
	○	○	○	○	○	○

2. Evacuate injured/wounded from a vehicle.

Compared to other common tasks...

	0	1	2	3	4	5
Time spent	None	Very small amount	Below average	About average	Slightly above average	Above average
	○	○	○	○	○	○

Figure 3. Screen shot of Army Job Analysis Survey.

Respondents were instructed to navigate to the website, review the project briefing, read and accept the Privacy Act Statement, complete some background questions (e.g., time in service, age, gender), and then complete the survey. Figure 3 provides a screen shot of the survey.

Data Processing and Sample Description

It originally appeared that we had 160 respondents to the survey, but further investigation revealed that 57 (36%) of those did not actually answer any questions. Anecdotal evidence suggests that some respondents may have confused this survey with a training needs analysis survey being conducted around the same time. After logging in successfully, they may have

mistakenly believed they already completed the survey, and then immediately logged out. Further, another eight respondents only completed the background information. Therefore, these 65 respondents were dropped from the data set. This left us with 66 incumbents and 29 supervisors. From here we dropped another 13 incumbents and seven supervisors for too many missing responses or patterned responding (i.e., selecting 1 for everything). This left us with a sample of 53 incumbents and 22 supervisors, 47% of our original sample.

Table 2 describes the incumbent and supervisor survey samples. We were fairly successful obtaining input from Active duty and U.S. Army Reserve (USAR) respondents, but less so with the Army National Guard (ARNG). The majority (57%) of the incumbent sample had been deployed within the previous 36 months and almost all members of the supervisor sample (96%) had been deployed. The supervisor sample included NCOs in E5 through E8 paygrades. The 53 incumbents came from 16 different MOS, with the largest percentage (28%) from 31B (Military Police). The 22 supervisors came from 17 different MOS.

Table 2. Survey Sample Description

	Incumbents		Supervisors	
Sample Size	53		22	
Component				
Active	25	47%	16	73%
ARNG	4	8%	0	
USAR	22	42%	6	27%
Missing		3%		
Recently Deployed	30	57%	21	96%
Paygrade				
E5			6	27%
E6			8	36%
E7			2	9%
E8			6	27%
Gender				
Female	7	13%	3	14%
Male	46	87%	18	86%
Hispanic				
Yes	10	19%	1	5%
No	43	81%	21	95%
Race[a]				
Black	8	15%	4	18%
White	38	72%	17	77%
Other - Native American, Asian, Pacific Islander	11	21%	0	

[a] Totals exceed 100% because respondents were allowed to select more than one race category.

Recall that we asked respondents to indicate the percentage of time they spent on eight types of duties while deployed. We thought that this information might be useful for understanding variation we might see in responses to other sections of the survey, although the sample sizes were too small to analyze the data. As shown in Table 3, most incumbent respondents who had recently been deployed reported some involvement in direct humanitarian assistance and force protection. Few reported involvement in intelligence operations or major construction.

Table 3. Percent Time Spent on Selected Deployment Duties

		Rank			
		Incumbent		Supervisor	
		Freq	%	Freq	%
Teach, train, instruct	None	16	53.3	9	42.9
	Small	6	20.0	3	14.3
	Moderate	6	20.0	6	28.6
	Large	2	6.7	3	14.3
Provide direct humanitarian assistance	None	12	40.0	8	38.1
	Small	9	30.0	8	38.1
	Moderate	9	30.0	3	14.3
	Large	0		2	9.5
Participate in search and destroy	None	17	56.7	13	61.9
	Small	9	30.0	3	14.3
	Moderate	4	13.3	4	19.0
	Large	0		1	4.8
Perform force protection	None	11	36.7	3	14.3
	Small	6	20.0	4	19.0
	Moderate	7	23.3	11	52.4
	Large	6	20.0	3	14.3
Control flow and movement	None	15	50.0	11	52.4
	Small	7	23.3	4	19.0
	Moderate	7	23.3	2	9.5
	Large	1	3.3	4	19.0
Provide medical, supply, maintenance	None	12	40.0	12	57.1
	Small	8	26.7	3	14.3
	Moderate	4	13.3	1	4.8
	Large	6	20.0	5	23.8
Conduct intelligence operations	None	22	73.3	13	61.9
	Small	4	13.3	3	14.3
	Moderate	4	13.3	3	14.3
	Large	0		2	9.5
Provide major construction	None	27	90.0	16	76.2
	Small	3	10.0	2	9.5
	Large	0		3	14.3

Note. Incumbent n = 30, supervisor n = 21. Small = 1-20%, Moderate = 21-80%, Large = 81-100%.

Although suitably diverse, the survey samples are too small to be considered representative or to yield reliable results. We did analyze the data, however, to show trends and to demonstrate how survey data can be used to construct a test blueprint.

Exploratory Analyses

Task Statement Ratings

We began by examining the task ratings. Appendix G (Table G.1) lists the mean task time spent ratings for the incumbent and supervisor samples, as well as for the total group. Table G.2 lists the same information for the mean task test emphasis ratings. There was one task (Perform first aid for cold injuries) that received a zero rating for time spent. The remaining mean time spent ratings hovered mostly in the middle of the 5-point rating scale (i.e., most ratings falling between 2.50 and 3.50, with none over 4.0). This was the case, despite the fact that the survey used a "relative" rating scale that should theoretically yield more spread across the scale. Examination of the test emphasis ratings showed a similar pattern, although supervisors showed a somewhat greater tendency to use more of the scale at the higher end, with 18 out of 99 tasks rated higher than 4.0.

Table 4. Category Mean Time Spent Ratings by Group

	Incumbent			Supervisor			Total		
	M	*n*	*SD*	*M*	*n*	*SD*	*M*	*N*	*SD*
First Aid	2.50	53	.86	2.69	22	.71	2.56	75	.82
NBC Protection and Decontamination	2.48	50	.96	2.39	21	.96	2.46	71	.96
Vehicle and Convoy Operations	2.84	52	.96	3.25	22	1.07	2.96	74	1.01
Threat ID and Reaction	2.61	53	.94	3.00	22	1.02	2.72	75	.97
Force Protection	2.46	52	.87	2.79	22	.95	2.56	74	.90
Urban Operations, Camouflage	2.38	52	.77	2.66	22	.92	2.46	74	.82
Navigation, Communication, Call for Fires	2.25	52	.79	3.20	22	.89	2.53	74	.92
Weapons	2.36	53	.86	2.80	22	1.06	2.49	75	.94
Supervise, Lead, Train	2.51	52	.90	3.15	22	1.16	2.70	74	1.02

To facilitate comparisons between the supervisor and incumbent ratings, we calculated the mean of the mean task ratings within each category (see Tables 4 and 5). With the exception of the NBC Protection and Decontamination ratings, the mean supervisor ratings (both time spent and test emphasis) were higher than the mean incumbent ratings. The differences were particularly pronounced in the test emphasis ratings for four task categories—(a) Vehicle and Convoy Operations; (b) Navigation, Communication, Call for Fires; (c) Weapons; and (d) Supervise, Lead, Train. Given the small number of supervisor raters, however, and the homogeneity of that small sample, we are unable to conclude that these patterns of differences would hold true with a larger-scale survey.

Table 5. Category Mean Test Emphasis Ratings by Group

	Incumbent			Supervisor			Total		
	M	*n*	*SD*	*M*	*n*	*SD*	*M*	*N*	*SD*
First Aid	2.87	53	.80	3.28	22	.74	2.99	75	.80
NBC Protection and Decontamination	2.75	53	.83	2.44	21	1.04	2.66	74	.90
Vehicle and Convoy Operations	2.97	53	.82	4.05	22	.73	3.29	75	.93
Threat ID and Reaction	3.03	53	1.09	3.67	22	.59	3.22	75	1.01
Force Protection	2.84	53	1.01	3.49	22	.73	3.03	75	.98
Urban Operations, Camouflage	2.86	53	.92	3.32	22	.59	2.99	75	.86
Navigation, Communication, Call for Fires	2.78	53	1.08	3.70	22	.67	3.05	75	1.06
Weapons	2.74	53	.98	3.62	22	.72	3.00	75	.99
Supervise, Lead, Train	2.71	52	.98	3.86	22	.89	3.05	74	1.08

We looked at the extent to which the time spent and test emphasis ratings corresponded with each other; that is, were tasks that E4 Soldiers spend most time on those judged to warrant more coverage on an E4 level test? The correlation between time spent and test emphasis ratings was .41 for supervisors ($n = 22$, $p = .06$) and .43 for incumbents ($n = 53$, $p < .001$). This suggests that the two judgments were only moderately related to one another for both types of respondents.

We also looked at the correlations between the supervisor and incumbent ratings. The correlation between supervisor and incumbent time spent ratings was .65 ($n = 99$, $p < .001$) and the correlation between supervisor and incumbent test emphasis ratings was .39 ($n = 99$, $p < .001$). This confirms our prior observations regarding Tables G.1 and G.2—that there was considerable disagreement between the two groups of raters regarding what should be covered on a test and less disagreement about time spent on various tasks.

Knowledge Statement Ratings

Only the supervisors rated the knowledge statements, and they used just a single test emphasis scale. The mean ratings are shown in Appendix G (Table G.3). These ratings are more tightly clustered than the task test emphasis ratings provided by the supervisors, ranging from 3.05 (Requirements of Environmental Regulations) to 4.48 (Leadership Duties). Thus, using a rating scale with relative anchors did not appear to help spread the ratings. This, in turn, makes the resulting data somewhat less useful for prioritizing knowledge areas for measurement.

Reactions to Survey

Survey respondents were asked to answer four questions about the survey, and their responses are summarized in Table 6. As we might expect, the incumbents found it a bit harder than supervisors to rate the tasks (the only part of the survey the incumbents completed, other than the background and survey feedback questions). But neither group indicated the tasks were very difficult to rate. For the supervisors, the hardest part of the survey was expected to be weighting the five test categories and this proved to be true given this received the highest difficulty rating (2.68 on a 5-point scale).

Table 6. Respondent Ratings of Difficulty Completing Survey

	Supervisors		Incumbents	
	M	*SD*	*M*	*SD*
Rating tasks on time spent	2.00	1.07	2.41	0.95
Rating tasks on test emphasis	2.22	1.11	2.41	0.91
Rating knowledges on test emphasis	2.04	1.21	N/A	N/A
Weighting categories	2.68	1.36	N/A	N/A

Note. 1-5 scale, where 1 = very easy and 5 = very difficult. Supervisor $n = 22$, Incumbent $n = 75$.

Survey respondents were also asked for open-ended comments. Based on many of the comments, however, it is evident that the incumbents (many of whom took the survey as part of the PerformM21 pilot test activities) confused the test emphasis survey with the prototype tests that were administered in the same session. The one clear message was that the incumbents thought the survey was too long. One of the two supervisor comments suggested the respondent was trying to fit the rating task into his understanding of how training is organized. It seems reasonable to assume that the context of the judgments would be more clearly understood were there actually an operational testing program for which the input would be directly linked in the minds of survey respondents.

Blueprint Development

Initial Category Weights

The basic process for transforming test emphasis ratings on individual task and knowledge statements into category weights for a test blueprint is fairly straightforward. As shown in Table 7, for each of the 13 task and knowledge categories, we began by summing the mean supervisor ratings for each task and knowledge statement in the category (see first column). We did not use the incumbent ratings because our original intention was to use those only for comparison to the supervisor ratings, not for blueprint development. Summing the mean ratings has the effect of giving greater emphasis to categories containing more tasks and knowledges. The next step was to sum those figures (see bottom of the first column) and use that as a basis for calculating the percent of the total accounted for by each category (shown in the third column). For example, the sum of the mean test emphasis ratings of the tasks in the First Aid category was 54.18, which is 13.85% of 391.17. The fourth column in Table 7 simply rounds these figures to the closest integer (e.g., 13.85 rounds to 14). The test weights in this column total 100%, so the actual number of points on a test for each category based on these weights would depend on the total number of points on the test (e.g., 14 First Aid points on a 100-item test or 28 points on a 200-point test).

Meta-Category Weights

Table 7 demonstrates development of test blueprint weights for the 13 common core categories on the survey, without regard for the five meta-categories. Assuming we want a blueprint that makes use of the meta-categories, there are two ways of constructing meta-category weights based on the survey data we collected. First, we can simply total the weights

we showed in Table 7 for the categories comprising each meta-category. We refer to these as "constructed" weights in Table 8. Second, we can compute the mean number of points the supervisors assigned to each of the five categories in Section 4 of the survey. As with the individual task and knowledge ratings, we transformed these points so that they totaled 100%. These are referred to as "holistic" weights in Table 8. For comparison, the last column in Table 8 shows the results of a similar holistic judgment exercise performed by the PerformM21 ATPAT members prior to administration of the survey.

Table 7. Category Test Emphasis Weights, Disregarding Meta-Categories

Category	Sum of Mean Ratings	Standard Deviation	Percent of Total	Weight (Rounded Percent of Total)
1. First Aid	54.18	.21	13.85	14
2. Weapons	42.96	.32	10.98	11
3. Force Protection	40.13	.13	10.26	10
4. Urban Operations	36.36	.17	9.29	9
5. Vehicle & Convoy Ops	29.83	.14	7.63	8
6. Threat ID	29.52	.23	7.55	8
7. Supervise	25.19	.13	6.44	6
8. Navigation	24.83	.18	6.35	6
9. NBC	21.93	.05	5.61	6
10. Leadership	28.95	.18	7.40	7
11. Rules & Regulations	21.76	.39	5.56	6
12. Army Policies	20.96	.35	5.36	5
13. Army History, Values	14.57	.14	3.72	4
Total	391.17		100%	100%

Table 8. Comparison of Meta-Category Test Emphasis Weights Derived Alternative Ways

Meta-Category	Constructed Weight (Survey)	Holistic Judgment (Survey)	Holistic Judgment (ATPAT)
Self-Protection and Defense	28	20	23
Weapons, Comm, Navigation	17	24	23
Tactical Ops	27	21	24
Supervision and Training	13	23	16
Army Roles and History	15	12	14
Total	100%	100%	100%

Army Roles and History received the lowest blueprint weight regardless of how it was derived. The only appreciable difference between the two sets of holistic weights is that the survey respondents weighted Supervision and Training quite a bit more than the ATPAT. Comparing the constructed and holistic survey weights (which were based on input from the same NCOs), we can see that there is more variation across categories for the constructed weights. This may be an artifact of the holistic judgment process. Think about dividing 100 points across five categories. The easiest way to approach this is to start with equal weights (i.e., 20 points for each category) and adjusting upward and downward from there. This might result in a bias toward similar weights across categories.

This is not to say that the holistic weights are less valid than the constructed weights. The constructed weights depend in significant part on the number of task and knowledge statements within each category. Although we strived to create statements that would be equivalent in form, it is likely that some statements are more or less broad than others (e.g., First Aid tasks appear to be more finely parsed than Supervision tasks). Examination of Table 8 provides some support for this hypothesis, as Supervision and Training has a constructed weight of 13, but a holistic weight of 23.

A Prototype Blueprint

Table 9 attempts to bring the categories and meta-categories together into a prototype blueprint. That is, this blueprint will yield a test on which Soldiers would get a total score and five subtest scores. We chose to use the survey-based holistic meta-category weights from Table 8 as our subtest weights. We then determined what percentage of each subtest would cover each content category within it by calculating within-subtest (meta-category) weights.

Even with large samples of respondents, there will be some sampling error that will lead to small non-substantive differences in the weights derived from one survey to the next. Earlier we discussed the advantages of having test blueprints that are relatively stable over time, so such minor changes to resulting blueprint weights would be undesirable. There is also intuitive appeal to working with rounder numbers. Thus, Table 9 shows a "smoothed" blueprint that rounds the subtest weights to multiples of 5.

Table 9. Prototype Test Blueprint

	Simple Weights		Smoothed Weights	
Subtest Content Category	Weight Within Subtest	Meta-Category Weight	Weight Within Subtest	Meta-Category Weight
Self-Protection and Defense		20		20
First Aid	51		50	
NBC	21		20	
Threat ID	28		30	
Weapons, Comm, Navigation		24		25
Navigation	63		65	
Weapons	37		35	
Tactical Ops		21		20
Vehicle & Convoy Ops	28		30	
Force Protection	38		35	
Urban Ops	34		35	
Supervision and Training		23		25
Supervise	46		45	
Leadership	54		55	
Army Roles and History		12		10
Rules & Regulations	38		40	
Army Policies	37		35	
Army History, Values	25		25	
Total Test		100		100

We skipped one step in construction of this blueprint, which is development of definitions for each of the test content categories. Such definitions would be based on a synthesis of the constituent tasks and knowledges into an easily digested yet informative summary of the content covered in the category. An example of such a format for the First Aid category is provided below:

> *First Aid refers to providing emergency, life saving care or treatment to Soldiers who are injured in training or combat. It encompasses tasks that range from evaluating injury to treating typical combat injuries in order to prevent worsening of the situation or death, including transporting and evacuating personnel. It also includes preventive care and countermeasures.*

If this were a blueprint destined for operational use (which we do not recommend given the small number of NCOs on which it is based), the next step would be to review the draft blueprint with a select senior group of NCOs (a test council). The final step would be policy approval. Some adjustments might be made based on a variety of considerations at these stages, although deviations from field input should be made only with deliberate and careful consideration.

Summary and Discussion

Survey and Blueprint Strategy

Given the limited number of individuals who responded to the survey, the primary products of our work here are the prototype survey itself, and the elaboration of a process for using survey results to draft a test blueprint. Although they could use refinement through further SME input, the task and knowledge statements and associated categories and meta-categories bring the Army considerably closer to the foundation of a common core test blueprint that reflects deployment-related lessons learned and that would be useful for an operational test program.

It is quite possible that the survey burden could be reduced by collecting only test emphasis ratings from supervisors and not collecting data from incumbents (at least at paygrade E4) at all. We are reluctant to recommend either of these steps, however, until enough data can be collected to better evaluate the implications of losing this additional information.

We should note that the survey we developed is designed to support development of a multiple-choice test blueprint, again with a liberal definition of "multiple-choice" meaning any of a variety of selected response test items. The survey is not designed to help determine what test methods (e.g., multiple-choice, hands-on, situational judgment, computer-based simulations) would be most appropriate to develop, nor to provide the additional information (e.g., critical incidents, contextual descriptors) that would be needed to design these alternative types of tests.

Survey Administration

Our survey response rate was very poor, even given that response rates for all types of surveys have been dropping over the last decade. The Army's usual approach to an occupational analysis survey, which we were not able to implement for this research, involves emailing a survey link to the desired population (e.g., all E4 Soldiers, all 31Bs) using Army Knowledge Online (AKO) email accounts. Assuming that will continue to be the Army's approach for their large-scale training-oriented occupational surveys, we are inclined to recommend identification of a smaller targeted sample of respondents for test emphasis surveys. Potential respondents would be identified to help ensure desired representativeness (e.g., of paygrades and MOS) and experience (e.g., with deployments). Then, these individuals would need to be told that they were specially selected to participate in the process. This approach would alleviate the security and survey length issues discussed previously. Another goal here would be to increase individual motivation to participate. Moreover, if a test emphasis survey is linked to a real test program, particularly one that is used to support promotion decisions, it is likely that incumbents and their NCOs will be more interested in participating in the survey because they will want to impact the program.

CHAPTER 4: ITEM DEVELOPMENT

Introduction

Job knowledge test item development typically follows a standard procedure: (a) conduct job analysis, (b) develop test blueprint, (c) develop items, (d) pilot test items, and (e) develop final test form. Chapter 3 discusses the first two steps, and this chapter is concerned with the third step. We did not attempt to pilot test these items or create new test forms as part of this project.

We began item development prior to completion of the job analysis survey because of time constraints. There were three sources for items: (a) Army-wide items developed in Phase II of the PerformM21 project (Knapp & Campbell, 2006); (b) Project A items (J.C. Campbell, & Knapp, 2001); and (c) items developed specifically for this research. Project A was a research effort wherein tests were developed for 20 MOS. Some of the items from these previously developed tests were used, updated, or otherwise modified for incorporation into this research (J.C. Campbell & Knapp). Because the job analysis survey was not completed when item development was initiated, we did not have a test blueprint to follow. Instead, we used the job analysis survey task and knowledge list as our guide.

Item Development

Our first step was to sort the Army-wide items from Phase II of the PerformM21 project into the survey categories. Phase II resulted in the development of 282 items, of which 70 were dropped due to poor item statistics during Phase III pilot testing. We were able to sort all but one of the remaining items into the tasks and knowledges. We then adapted 20 Project A items, which we were able to improve by upgrading the graphics (e.g., changing black and white graphics to color).

For new item development, we targeted areas we believed would be rated as most important in the survey, and for which we did not already have items. These areas are shown in Table 10. Comparison with Table 9 shows that we made good choices.

Table 10. Targeted Task/Knowledge Areas for New Item Development

Task/Knowledge Area	Example Task or Knowledge
Vehicle and Convoy Tactical Operations	Occupy floating rally point
Threat Identification and Reaction – Mines, Snipers, Ambush	React to ambush – dismounted
Force Protection, Crowd Control, Security and Intelligence, Detainee Operations	Conduct an urban patrol
Urban Operations, Camouflage, Fighting Positions	Conduct building assaults
Rules, Regulations, Laws of Conduct	Geneva Convention
Army Policies and Practices	Equal Opportunity Policy

As with the other PerformM21 efforts, we focused on developing non-traditional items (e.g., matching, drag and drop, and matrix). Item development is an iterative process, with each item undergoing multiple reviews and edits. Item development may proceed with items being developed by SMEs trained by test developers, or by item developers using appropriate reference material. For this research, 56 items were developed by project staff using various technical

manuals (TMs), field manuals (FMs), and other training material, often material developed specifically for OIF/OEF operations. Recall that some of the source material had an FOUO designation; thus, items developed from this material also carried an FOUO designation. This means that extra care is necessary when printing, circulating, or publishing the items (e.g., publishing items in assessments that are then hosted on the Internet). In all, there were 37 FOUO items.

Item Review

As mentioned, items are often reviewed and edited multiple times to ensure they are clearly written and appropriate for the testing purpose. The items adapted from Project A and the newly developed items were reviewed by both project staff and Army SMEs. We had a group of three NCOs (one at the E6 level and two at the E7 level) serve as our SMEs. We recruited them with the help of the ATPAT. Each SME was sent a packet containing the 76 items (newly developed plus Project A-adapted items), a list of the survey categories, and instructions detailing how to review the items. The following factors were considered during item review:

- Is the wording of the stem and response options appropriate for our target test-taking population?
- Is the keyed option correct and are the unkeyed options incorrect?
- Is the item content still applicable or current?
- Does the item belong in the blueprint category in which it is placed?
- Is the item too trivial?

Based on the SMEs suggestions and input, the items were edited. We suggest that these newly-developed items be reviewed by at least one other group of three to six SMEs prior to being pilot tested. Table 11 shows the number of items in each blueprint category.

Most item development efforts will also include content validity ratings, which assess the items' relevance and criticality to the job. For an operational assessment, it would be best to collect these ratings from three to six judges who were not involved in the item development process. The judges should use some variation of the following scales to render their judgments:

- How important is the knowledge or skill required to answer this item for acceptable performance? Ratings are made on a 4-point scale ranging from "not important" to "very important."
- Lack of the knowledge or skill required to answer this item could result in performance errors that might cause: Options range from "no negative consequences" to "seriously damaging consequences."

We did not collect content validity ratings for any items included in this project.

Table 11. Distribution of Items Across Prototype Blueprint

Content Category	Meta-Category Weight	Number of items[a]
Self-Protection and Defense	20	
First Aid		24
NBC		7
Threat ID		24
Weapons, Comm, Navigation	25	
Navigation		18
Weapons		64
Tactical Ops		20
Vehicle & Convoy Ops		23
Force Protection	20	
Urban Ops		11
Supervision and Training	25	
Supervise		21
Leadership		24
Army Roles and History	10	
Rules & Regulations		10
Army Policies		9
Army History, Values		27
Total Test	100	282

[a] Items in this column include Army-wide items pilot tested in Phase II, adapted Project A items, and newly developed items.

Summary

In line with the discussion in Chapter 2, we anticipated that some of these task and knowledge areas might be more difficult to find suitable reference material for than others. Not surprisingly, it was fairly easy to find reference material for Rules, Regulations, Laws of Conduct and Army Policies and Practices. These are not areas subject to change based on theater of operations. Chapter 2 noted that much of the material was theater- or area-specific. For example improvised explosive devices (IEDs) are more of a problem in Fallujah and along the Syrian border than in the south of Iraq. Soldiers deployed to those areas are likely to have different viewpoints on what kind of a threat IEDs are and how to prevent or locate them. Indeed, the information can even be time-specific. For example, suicide bombings were more of a problem in the summer than fall of 2005. The SME reviews support these comments as well. The SMEs had been deployed, but to different places and at different times. In reviewing the items, some agreed that tasks were to be performed in a certain manner whereas others disagreed. For instance, one of the CALL website documents specified the order in which Soldiers are to exit and re-enter a vehicle that has come under attack. Part of the SME group agreed and part indicated order did not matter.

The theater-specificity of some tasks and knowledge areas has consequences for developing and maintaining an Army-wide assessment of tasks and knowledges that reflect the current operating environment. There is likely to be some need to update item content and/or

scoring if, for example, the order of steps changes from one theater to another. An example from Chapter 2 is the steps for conducting a trauma assessment. The "standard" way to conduct trauma assessment is airway, breathing, circulation (ABC). However, because of the types of injuries they are seeing in Iraq, the operational sequence is circulation, airway, breathing (CAB). An item keyed according to the standard way to conduct trauma assessment would have to be either re-keyed to reflect the operational reality (for some Soldiers) or the item would have to be qualified in some manner such as, "Based on how you were taught in AIT (or Iraq), the correct sequence for conducting..."

It is also possible that an assessment blueprint for Soldiers in, or soon to be in, Iraq would be different from one for Soldiers in Afghanistan or Korea. These examples illustrate why conducting a comprehensive survey such as the prototype developed for this research is so important. Of course, for an operational survey, a much larger sample size to ensure more voices were heard would be of paramount importance.

CHAPTER 5: SUMMARY OF RESULTS

Recall that the PerformM21 effort was a 3-year feasibility effort to identify viable approaches for the development of a useful yet affordable operational Soldier performance assessment system (Knapp & Campbell, 2006). The research goal was to further the work started under the PerformM21 project to include understanding of how recent deployment activities can and should influence Army assessment program content. This was accomplished by developing a prototype survey for determining suitable content for an operational common core examination and developing new test items covering areas especially pertinent to recent deployment activities in the Middle East.

Our work began with development of task and knowledge lists intended to comprehensively capture potential test content for all E4 Soldiers, including those serving in a deployed capacity. Challenges included (a) obtaining material representing recent lessons learned from sources that have not been well-processed or well-documented, (b) identifying material that is reasonably applicable across time and settings, and (c) identifying doctrinal references for recent lessons learned. Without established doctrine, it would not be reasonable to hold Soldiers accountable for the material; however, the Army is increasingly becoming an organization in which the field, rather than the schoolhouses, is establishing doctrine. Another challenge was development of test content categories that adequately serve testing needs (e.g., for suitably long subtests) while avoiding combining unrelated content areas.

The prototype test emphasis survey and associated test blueprint development procedures demonstrate how field input can be efficiently and directly translated into the design for a content valid test that reflects the experience of a broad range of Soldiers, including those who have recent deployment experience in a variety of regions. Although we were unable to collect data from many respondents, the survey and associated procedures are robust and can be adapted for future use very easily. It would be desirable to have further field input into the task and knowledge lists, but we expect the changes would be relatively minor. Indeed, repeating administration of the current survey to gather input from a larger sample of respondents would provide the Army with a reasonable working operational test blueprint.

Project staff developed new test items to tap some of the content areas that seem particularly relevant to recent deployment operations. Combining these common core items with those developed in PerformM21 yields a bank of 282 test items that the Army now has to support future test activities. This is a sizable starting test bank, although it should be pointed out that content validity ratings should be collected on all of these items, and some of them still need to be pilot tested.

In summary, despite the challenges associated with incorporating recent lessons learned in deployment operations into an Army test program, we believe that it is not only possible to do so, but vital that this be done. Both the credibility and effectiveness of testing are dependent on the job-relevance of test content, which can be ensured through frequent and carefully collected input from a variety of available resources (e.g., the CALL website) and input from the field (as illustrated through our prototype job analysis survey).

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Appendix A

Army-Wide Common Core Tasks and Knowledge Categories

Common Tasks: Skill Level 1

1. First Aid.
2. M16 rifle/M4 carbine/M9 pistol.
3. Nuclear, Biological, and Chemical (NBC).
4. Communicate: Radio and telephone.
5. Combat Techniques (Survive).
6. Navigate, mounted and dismounted.
7. Defense Measures: camouflage, SALUTE (size, activity, location, unit, time, equipment), operational security (OPSEC).
8. M60 machine gun/ M249 squad automatic weapon (SAW)/M240B machine gun.
9. Individual Conduct and Laws of War.
10. Hand grenades and land mines.
11. Remains reporting and handling.
12. Caliber .50 M2 machine gun.
13. M203 40mm grenade launcher.
14. MK19 40mm grenade launcher machine gun.
15. M136 launcher/AT4 light anti-tank weapon.

Common Tasks: Skill Level 2

1. Combat techniques (Survive).
2. First Aid: Medical evacuation (MEDEVAC),preventive medicine.
3. Equipment and maintenance: preventive maintenance checks and services (PMCS), supply discipline, property accountability.
4. Defense measures: Squad defense.
5. Navigate: Map overlays.
6. Risk Management: Accident prevention.
7. Nuclear, Biological, and Chemical (NBC).

Leadership

1. Identify the leadership duties, responsibilities, authority, and requirements of officers and NCOs.
2. Know the policies and procedures of the chain of command and of the NCO support channel.
3. Identify the principles of BE, KNOW, DO.
4. Know the principles of discipline.
5. Identify the risk management process.
6. Identify the steps of assuming a leadership position.
7. Know the NCO Education System (NCOES).
8. Know the characteristics of effective counseling.
9. Understand the principles of the rules of engagement (ROE) and use of force.
10. Know the steps in troop leading procedures (TLP).

11. Prepare for and conduct inspections and perform on-the-spot corrections.
12. Resolve an ethical problem.
13. Know the problem solving steps in decision-making.
14. Understand the requirements of the semi-centralized (E5-E6) promotion system.
15. Know the principles of financial management.
16. Identify the Army's homosexual policy.

Training

1. Train subordinates to perform an individual task.
2. Prepare for and conduct preparatory marksmanship training (PMT).
3. Identify the roles and responsibilities of the NCO in training.
4. Prepare for and conduct drill and ceremonies.
5. Conduct performance oriented training.
6. Prepare for and conduct crew drills.
7. Identify the roles and functions of initial training, entry training (IET) institutional training (IT), self-development (SD) training, professional military education (PME), and unit training UT).
8. Know the principles and applications of Army training time management (Green, Amber, Red).
9. Identify the content, uses, sources and locations of training publications, Army Test and Evaluation Program-Mission Training Plan (ARTEP-MTP), field manuals (FM), technical manuals (TM), Soldier training publications (STP), training support packages (TSP), tactics, techniques and procedures (TTP), and lessons learned (LL).
10. Know the principles of Battle Focused Training.
11. Conduct training preparation.
12. Prepare for and conduct Sergeant's Time and opportunity training.
13. Prepare a training outline/lesson plan.

Army History and Customs; Army Values

1. The Army in Colonial Times: US Militia, the Revolutionary War, the War of 1812, the Mexican War.
2. The Army from the Civil War to WWI: the Civil War, the frontier settlements, the Spanish-American War.
3. The Army in the World Wars and Containment: WWI, between the wars, WWII, the Cold War, Korea, Viet Nam.
4. The Army post-Viet Nam and the Volunteer Army: the Volunteer Army, the end of the Cold War, the Gulf War, relief in Africa, Haiti, the Balkans, the War on Terrorism, the Second Gulf War.
5. The Army in the Contemporary Operational Environment: the increasing range of threats, full spectrum operations, Homeland Security, the Army Transformation.
6. The Army Customs and Courtesies: the hand salute, bugle calls, the Army Flag.
7. The Seven Army Values.

Appendix B

Warrior Tasks and Battle Drills – Initial Entry Training (IET)

TASKS

Shoot

1. Qualify with assigned weapon.
2. Correct malfunctions with assigned weapon.
3. *Engage targets with M240B machine gun.
4. *Engage targets with M249 (SAW) machine gun
5. *Engage targets with M2 .50 caliber machine gun.
6. *Engage targets with MK19 machine gun.
7. Correct malfunctions on an M2 .50 caliber machine gun.
8. Correct malfunctions on an M240B machine gun.
9. Correct malfunctions on an M49 (SAW) machine gun.
10. Correct malfunctions on an MK19 machine gun.
11. Engage targets with weapon using night vision sight AN/PVS-4.
12. *Engage targets with weapon using night vision sight AN/PAS-13.
13. *Engage targets with weapon using night vision sight AN/TVS-5.
14. Engage targets using aiming light AN/PEQ-2A.
15. Engage targets using aiming light AN/PAQ-4.
16. Employ mines (manned) and hand grenades.

Communicate

17. Perform voice communications: Situation Report (SITREP), Spot Report (SPOTREP).
18. Perform voice communications: Call for Fire.
19. *Perform voice communications: Medical Evacuation (MEDEVAC).
20. Use visual signaling techniques.

Joint Urban Operations

21. Perform movement techniques during an urban operation.
22. Engage targets during an urban operation.
23. Enter a building during an urban operation.

Move

24. Determine location on the ground using terrain association, map, and global positioning system (GPS).
25. Navigate from one point to another dismounted.
26. Move over, through, or around obstacles, except minefields.
27. Prepare a vehicle for a convoy operation.

Fight

28. Move under direct fire.
29. React to indirect fire, dismounted and mounted.
30. React to direct fire, dismounted and mounted.
31. React to unexploded ordnance (UXO) hazard.

32. React to man-to-man contact (combatives).
33. React to chemical or biological attack or hazard.
34. Decontaminate your self and individual equipment using chemical decontaminating kits.
35. Maintain equipment.
36. Evaluate a casualty.
37. Perform first aid for open wound – abdominal, chest, head.
38. Perform first aid for bleeding of an extremity.
39. Select temporary fight position.

BATTLE DRILLS

1. React to contact: visual, improvised explosive device (IED), direct fire (including rocket propelled grenades [RPG]).
2. *React to ambush – blocked.
3. *React to ambush – unblocked.
4. React to indirect fire.
5. React to chemical attack.
6. Break contact.
7. *Dismount a vehicle.
8. *Evacuate injured personnel from vehicle.
9. Secure at a halt.

*Task or battle drill currently not being trained to standard in IET – familiarization training only.

Appendix C

FY06 Common Task Test – Skill Levels One and Two

Skill Level 1

Task 1: (Commander chooses one of the following three tasks):
1. *Maintain an M9 pistol.
2. *Maintain an M4 or M4G.1 carbine.
3. *Maintain an M16-series rifle.

Task 2: (Commander chooses one of the following five tasks):
1. *Maintain an M2 .50 caliber machine gun.
2. *Maintain an M240B machine gun.
3. *Maintain an MK19 machine gun.
4. Maintain an M60 machine gun.
5. *Maintain an M249 (SAW) machine gun.

Task 3: *React to a possible improvised explosive device (IED).

Task 4: *Move under direct fire.

Task 5: *Evaluate a casualty (tactical combat casualty care).

Task 6: *Perform first aid for a bleeding or severed extremity.

Tasks 7-12: (Commander chooses six of the following twelve tasks):
1. Detect explosive hazard indicators by visual means.
2. *React to indirect fire while dismounted.
3. *Navigate from one point on the ground to another point while dismounted.
4. *React to direct fire while mounted.
5. Perform first aid to prevent or control shock.
6. Practice individual preventive medicine countermeasures.
7. Communicate via a tactical radio in a secure net.
8. Search vehicles in a tactical environment.

   or

   Search a vehicle for explosives or prohibited items.
9. Employ progressive levels of individual force when confronting civilians.
10. Control entry to and exit from a restricted area.

    or

    Control access to a military installation.
11. *Report intelligence information.
12. Operate a vehicle in a convoy.

Skill Level 2

Tasks 13-15: (Commander chooses three of following six tasks):

1. Establish an observation post.
2. *Request medical evacuation.
3. *Evaluate casualties.
4. *Conduct a presence patrol.
5. Conduct combat operations according to the Law of War.
6. Employ accident prevention measures and the risk management process.

*Indicates task corresponds to a task in the Warrior Task and Battle Drill list.

Appendix D

TRADOC-ARI Common Tasks Survey – Skill Levels One and Two

Skill Level 1

Task Categories and Number of Tasks

1. Individual Conduct: 19 tasks.
2. First Aid: 23 tasks.
3. Nuclear, Biological, Chemical (NBC): 25 tasks.
4. Unit Operations: 62 tasks.
5. Land Navigation: 8 tasks.
6. Communications: 10 tasks.
7. Security and Intelligence: 13 tasks.
8. Crowd and Riot Control: 4 tasks.
9. Defensive Measures: 24 tasks.
10. Leadership: 3 tasks.
11. M16 Series Rifle: 7 tasks.
12. M4 Series Carbine: 8 tasks.
13. M9, 9mm Piston: 4 tasks.
14. M136 Anti Tank Launcher – AT-4: 3 tasks.
15. Hand Grenades and Grenade Launchers (M203/MK19): 11 tasks.
16. Shotgun: 3 tasks.
17. M240B Machine Gun: 10 tasks.
18. M249 (SAW) Machine Gun: 8 tasks.
19. M60 Machine Gun: 12 tasks.
20. M2, .50 caliber Machine Gun: 11 tasks.
21. MK19 Machine Gun: 8 tasks.

Skill Level 2

Task Categories and Number of Tasks

1. First Aid: 6 tasks.
2. Nuclear, Biological, Chemical (NBC): 25 tasks.
3. Unit Operations: 38 tasks.
4. Land Navigation: 3 tasks.
5. Communications: 6 tasks.
6. Defensive Measures: 11 tasks.
7. Administrative: 12 tasks.
8. Training: 4 tasks.
9. Maintenance and Supply: 6 tasks.
10. Risk Management and Force Protection: 8 tasks.
11. Military Justice: 4 tasks.
12. Leadership: 19 tasks.

Appendix E

CALL-Based Categories, Knowledges, Topics, and Tasks

Category: People, Culture, Sociology, Area

1. Iraqi History – People: Turkomans, Arabs, Kurds.
2. History – Religion: Shi'a, Sunni, Islam, Christian.
3. Iraqi Calendar and Holidays.
4. Iraqi Customs and Culture: Women, food, family, dress, hospitality.
5. History – Politics: Parties and groups.
6. Iraq – Key political figures.
7. Regime loyalists.
8. Paramilitary groups.
9. Fundamentalist groups.
10. Afghani – Key political figures.
11. Afghani – Key political parties and groups.
12. Iraqi Army.
13. Afghani Army.
14. Coalition Forces.
15. Non-Governmental Organizations (NGOs), International Organizations (IOs), Private Volunteer Organizations (PVOs).
16. Arabic Language: Key words, phrases, greetings, operational terms, numbers, signs.
17. Iraq – key provinces and cities; facilities.
18. Afghanistan – key regions, cities, facilities.
19. Iraq – terrain and weather.
20. Afghanistan – terrain and weather.

Medical: Preventive Medicine and First Aid

1. Handwashing, cleanliness.
2. Eating and drinking.
3. Fitness.
4. Sleep.
5. Insect/vector repellent and protection.
6. Diarrhea.
7. Upper respiratory illness (URI).
8. Leishmaniasis.
9. Sand fly fever.
10. Malaria.
11. Dengue.
12. Leptospirosis.
13. Schistosomiasis.
14. Typhoid.
15. Paratyphoid enteric fever.
16. Rabies.
17. Carbon monoxide poisoning.
18. Heat injuries.

19. Cold injuries.
20. Trench foot.
21. Snake and insect bites.
22. Acute mountain sickness (AMS).
23. High altitude cerebral edema (HACE).
24. High altitude pulmonary edema (HAPE).
25. Diomax prophylactic treatment administration (mountain operations).
26. Hearing loss.
27. Eye protection/injury.
28. Combat stress.
29. Suicide prevention.
30. Trauma assessment (circulation, breathing, airway – CBA).
31. Self (one-hand) tourniquet application.
32. Tourniquet application (precedes pressure dressing).
33. Use of Emergency Trauma Dressing.
34. Use of Kurlex.
35. Treatment of penetrating neck injuries.
36. Identification of tension pneumothorax.
37. Use of the folding litter – half fold and quad fold.
38. Use of Quick Clot.
39. Use of the Combat Pill Pack (Tylenol, COX-2 inhibitor, Gatifloxacin).
40. Casualty evacuation (CASEVAC)/medical evacuation (MEDEVAC); use of 9-line MEDEVAC.

Vehicle and Convoy Operations

1. Prepare vehicle for convoy operations.
2. Conduct convoy pre-combat checks.
3. Conduct vehicle/convoy troop leading procedures.
4. Perform driver side contact vehicle battle drill.
5. Perform truck commander contact vehicle battle drill.
6. Perform exit/enter vehicle battle drill.
7. Perform exit/enter cargo area vehicle battle drill.
8. Perform react to contact/threat (maintain movement) convoy battle drill.
9. Perform forced stop convoy battle drill.
10. Conduct CASEVAC/recovery operations.
11. Perform break contact convoy battle drill.
12. Occupy a floating rally point.
13. Prepare improvised explosive device (IED)/unexploded ordnance (UXO) reports.
14. Use vehicle/convoy visual (hand and arm) signals.

Urban Combat Operations

1. Conduct top down and bottom up building assaults.
2. Establish urban footholds in combat operations.
3. Clear a structure – entry and breaching.
4. Take actions on contact – urban operations.
5. Employ supporting fires – urban operations.

6. Employ demolitions – composition four (C4).
7. Construct and employ Molotov cocktails.
8. Construct and employ propane fuel-air explosives.

Combat Operations and Procedures

1. Operate a vehicle check point.
2. Conduct entry control point (ECP) operations.
3. Perform vehicle search procedures.
4. Conduct IED reaction drills.
5. Perform graduated response for traffic movement.
6. Identify IED/VBIED threats.
7. React to a hostile crowd.
8. Employ reflexive fires.
9. React to ambush.
10. React to sniper.
11. Operate Handheld Standoff Mine Detector System (HSTAMIDS).
12. Know and identify anti-coalition militia (ACM) tactics, techniques, and procedures (TTP).
13. Interact with battlefield media.
14. Know and apply Law of War and Coalition Forces Land Component Command (CFLCC) Rules for Use of Force.

Appendix F

Lessons Learned List of Tasks and Knowledges

Task List

First Aid, Preventive Medicine, and Medical Evacuation

1. Administer first aid for nerve agent casualty (buddy aid).
2. Evacuate injured/wounded from a vehicle.
3. Evaluate a casualty.
4. Initiate an intravenous infusion.
5. Practice preventive medicine – hygiene, sleep, environment, insects, food and drink, weather.
6. Perform fist aid for an open wound – abdominal, chest, head.
7. Perform first aid – bleeding/traumatic amputation/apply combat application tourniquet (CAT).
8. Perform first aid – burns.
9. Perform first aid – cold injuries.
10. Perform first aid – heat injuries.
11. Perform first aid – shock.
12. Perform first aid – fracture.
13. Perform first aid – throat obstruction.
14. Perform mouth-to-mouth resuscitation.
15. Put on a field/pressure/emergency trauma dressing.
16. Request a medical evacuation (medical evacuation/casualty evacuation – MEDEVAC/CASEVAC).
17. Transport a casualty.
18. Recover remains.

NBC Protection and Decontamination

1. Cross a contaminated area – chemical or radiological.
2. Decontaminate equipment.
3. Decontaminate self/skin.
4. Detect chemical agents.
5. Put on and wear/operate in protective mask and mission oriented protective posture (MOPP) gear – eat, drink, sleep, waste.
6. Exchange MOPP gear.
7. Maintain protective mask/change canister.
8. React to attack or hazard – chemical, radiological, biological.

Vehicle and Convoy Tactical Operations

1. Perform vehicle preventive maintenance checks and services (PMCS) – before, during after operations.
2. Prepare for convoy/movement vehicular operations.
3. Drive vehicle, with or with out trailer – day, night, black-out, convoy, off-road.

4. Provide convoy in-transit security.
5. Secure vehicles/convoy at a halt.
6. Perform exit/enter vehicle battle drill.
7. Perform forced stop convoy battle drill.
8. Perform break contact convoy battle drill.
9. Occupy a floating rally point.

Threat Identification and Reaction – Mines, Sniper, Ambush

1. Identify threats visually and by other indicators – mines, improvised explosive device (IED), vehicle borne improvised explosive device (VBIED), booby traps.
2. Locate mines by probing.
3. Mark/report unexploded ordnance (UXO) hazards.
4. Conduct self-extraction from a mined area.
5. React to contact (mounted or dismounted) – attack, indirect fire, mines, IED, VBIED, rocket propelled grenade (RPG).
6. Move under direct fire.
7. React to sniper.
8. React to ambush (mounted) – blocked or unblocked.
9. React to ambush – dismounted.

Force Protection, Crowd Control, Security and Intelligence, Detainee Operations

1. Operate a vehicle/personnel control checkpoint – search and clear vehicles/personnel.
2. Construct non-explosive approach and control obstacles.
3. Conduct entry control point (ECP) operations.
4. Conduct intrusion prevention and control measures.
5. Conduct an urban patrol – dismounted or mounted.
6. Visually identify vehicles and aircraft – friend or foe.
7. Establish and occupy an observations post (OP).
8. Conduct surveillance/collect, report intelligence information.
9. Conduct crowd/riot control operations/formation/tactics.
10. React to man-to-man contact (combatives)/subdue prisoner/detainee.
11. Identify/secure/search/segregate/safeguard/process – non-combatants/retained personnel. (RP)/civilian internees (CI)/enemy prisoners of war (EPW).
12. Process captured or suspect material, weapons, equipment.
13. Recognize and process captured or found intelligence items.

Urban Operations, Camouflage, Fighting Positions

1. Perform fire/maneuver during urban tactical operations/employ supporting fires.
2. Execute building breach – explosive, mechanical, shotgun.
3. Conduct building assaults – top down or bottom up.
4. Prepare individual and crew-served weapons positions – urban operations.
5. Search/secure a building/room.
6. Practice noise/light/litter discipline.
7. Select/prepare/hasty/temporary fighting/weapons positions – urban/non-urban.
8. Move over, through, around obstacles (dismounted) (except minefields).
9. Clear fields of fire.

10. Camouflage self.
11. Camouflage equipment/fighting positions.
12. Prepare a defensive position range card.

Navigation, Communication, Call for Fires

1. Determine direction/location on the ground – field expedient, map, global positioning system (GPS), terrain association.
2. Navigate from one point to another on the ground using map/GPS/non-GPS – mounted/dismounted.
3. Locate a target by grid coordinates.
4. Call for and adjust indirect fire.
5. Set up, operate, and communicate over tactical/commercial radios.
6. Perform voice communications – send situation report (SITREP)/spot report (SPOTREP).
7. Construct field expedient antennae.
8. Use visual signaling techniques/react to arm and hand signals.

Weapons, Grenades, Mines, and Demolitions

1. Employ and recover antipersonnel mines.
2. Employ and recover antitank mines.
3. Employ demolitions – composition four (C4), trinitrotoluene (TNT), blasting caps, detonating cord.
4. Maintain, operate, and engage targets – M16 series rifle/M4 carbine.
5. Maintain, operate, and engage targets – M9, 9mm pistol.
6. Maintain, operate, and engage targets – M136 (AT4) light anti-tank weapon.
7. Maintain, operate, and engage targets – M203 grenade launcher.
8. Maintain, operate, and engage targets – MK19 grenade launcher machine gun.
9. Maintain, operate, and engage targets – hand grenades.
10. Maintain, operate, and engage targets – shotgun.
11. Maintain, operate, and engage targets – light machine guns (M240B, M249 squad automatic weapon (SAW), M60).
12. Maintain, operate, and engage targets – M2, .50 caliber machine gun.
13. Maintain, operate, and engage targets – night vision sights, aiming lights.
14. Employ non-lethal weapons (NLW) – malodorants, irritants, pulsed energy, anti-traction, thermobaric, special munitions, batons.

Supervise, Lead, and Train Others

1. Conduct inspections and perform on-the-spot corrections.
2. Conduct/lead – drill and ceremonies, formations, troop movements.
3. Counsel subordinates/peers.
4. Train subordinates to perform an individual task.
5. Prepare for and conduct preparatory marksmanship training (PMT).
6. Conduct performance oriented training.
7. Prepare for and conduct crew/battle drills training.
8. Prepare a training outline/lesson plan.

Knowledge List

Rules, Regulations, Laws of Conduct

1. Code of Conduct – Six articles of required or prohibited behaviors.
2. Laws of War – prohibited acts, prohibited weapons/devices, seizure/use of property.
3. Geneva Convention – definition/treatment of prisoner of war (PW)/detainees, protection of civilians.
4. Requirements of Federal, State, Local Environmental Regulations – spills, hazardous materials, marking, reporting.
5. Rules of Engagement (ROE) and Use of Force – fundamental concept, definitions, self-defense, RAMP (return, anticipate, measure, protect).
6. Requirements of the Uniform Code of Military Justice (UCMJ) – application, selected punitive articles, definitions, types of judicial/non-judicial actions.

Army Polices and Practices

1. Drug and Alcohol Abuse Policy – prohibitions, rehabilitation, punishments, voluntary help.
2. Equal Opportunity Policy – who, where applied, complaint process.
3. Sexual Harassment and Reporting Policy – definitions, verbal, non-verbal, physical, assertive behavior, reporting.
4. Homosexual Policy – don't ask, don't tell, don't harass; orientations vs. conduct, reporting, service policies.
5. Army Physical Fitness Standards – components, conditions, Army Physical Fitness Test (APFT), nutrition.
6. Interactions With News Media – identification, operational security (OPSEC), rights, guidelines.

Leadership Procedures and Principles

1. Leadership duties, responsibilities, authority, and requirements of officers, warrant officers (WO), and non-commissioned officers (NCO).
2. Principles of discipline.
3. Policies and procedures of the chain of command and the NCO support channel.
4. Principles of BE, KNOW, DO.
5. Steps of troop leading procedures (TLP).
6. Steps of decision-making (problem solving).
7. Roles and responsibilities of NCO in training.

Army History, Customs, Values

1. Army History – major wars, Cold War, All-Volunteer Army, organizations, notable personalities.
2. History of the NCO – evolution of ranks/responsibilities.
3. Army Customs and Courtesies – uniform, saluting/reporting, bugle calls, ranks/insignia.
4. Army Values and Warrior Ethos.

Appendix G

Descriptive Statistics for Task and Knowledge Statement Ratings

Table G.1 Mean Time Spent Ratings for Task Statements

	Incumbent		Supervisor		Total Sample	
	M	*SD*	*M*	*SD*	*M*	*SD*
First Aid						
Evaluate Casualty	3.40	1.11	3.38	1.16	3.39	1.11
Perform FA - heat injuries	3.02	1.30	3.05	1.13	3.03	1.25
Perform FA - bleeding extremities	2.96	1.17	3.05	1.07	2.99	1.14
Perform FA - open wound	2.93	0.98	3.10	1.09	2.99	1.01
Put on field dressing	2.90	1.02	3.14	1.21	2.97	1.07
Request MEDEVAC	2.65	1.27	3.38	1.53	2.88	1.39
Perform FA - shock	2.82	1.10	3.00	1.05	2.87	1.08
Evacuate from vehicle	2.81	1.14	2.90	1.34	2.84	1.19
Practice preventive med	2.67	1.20	3.05	1.32	2.79	1.24
Initiate IV	2.61	1.20	3.13	0.89	2.75	1.14
Transport casualty	2.56	1.20	3.19	1.54	2.75	1.33
Perform FA - fracture	2.69	1.08	2.86	0.99	2.75	1.05
Perform FA - burns	2.72	1.06	2.73	1.20	2.72	1.10
Perform mouth-to-mouth	2.72	1.03	2.43	1.03	2.63	1.03
Perform FA - throat obstruction	2.63	1.02	2.50	1.05	2.59	1.03
Recover remains	2.39	1.12	2.71	1.14	2.49	1.12
Buddy Aid	2.56	1.18	1.89	1.23	2.36	1.23
Perform FA - cold injuries	0.00	0.00	0.00	0.00	0.00	0.00
NBC Protection & Decontamination						
Put on/wear MOPP	2.76	1.34	2.65	1.14	2.73	1.27
Decontaminate self	2.65	1.14	2.37	1.12	2.57	1.13
Detect chemical agents	2.60	1.16	2.41	1.12	2.55	1.14
React to attack/hazard	2.59	1.21	2.45	1.19	2.55	1.19
Exchange MOPP	2.52	1.15	2.53	1.07	2.52	1.12
Maintain mask	2.43	1.19	2.71	1.06	2.51	1.15
Cross contaminated area	2.52	1.09	2.39	1.14	2.48	1.10
Decontaminate equip	2.46	1.11	2.24	1.25	2.40	1.14
Vehicle & Convoy Tactical Ops						
Perform vehicle PMCS	3.25	1.31	3.77	1.07	3.41	1.26
Prepare for convoy	3.15	1.20	3.48	1.17	3.25	1.19
Secure vehicles at halt	3.04	1.08	3.36	1.40	3.14	1.19
Perform exit/enter battle drill	2.96	1.10	3.05	1.56	2.99	1.25
Perform forced stop battle drill	2.84	1.10	3.29	1.35	2.98	1.19
Provide convoy security	2.81	1.44	3.23	1.38	2.94	1.42
Perform break contact drill	2.73	1.12	3.40	1.23	2.94	1.18
Drive vehicle	2.72	1.21	3.33	1.28	2.93	1.26
Occupy floating rally pt	2.56	1.10	2.83	1.29	2.65	1.16
Threat ID & Reaction						
Move under direct fire	2.88	1.03	3.50	0.83	3.06	1.01

	Incumbent		Supervisor		Total Sample	
	M	*SD*	*M*	*SD*	*M*	*SD*
React to ambush (mounted)	2.79	1.07	3.55	1.10	3.01	1.13
React to contact	2.80	1.28	3.38	1.47	2.99	1.35
ID threats visually	2.67	1.33	3.32	1.29	2.88	1.34
React to ambush (dismounted)	2.71	1.05	3.28	1.07	2.86	1.08
Mark/report UXO	2.84	1.10	2.81	1.03	2.83	1.07
React to sniper	2.64	1.18	3.15	1.35	2.80	1.25
Locate mines by probing	2.73	0.96	2.75	1.00	2.74	0.96
Conduct self-extract	2.66	1.21	2.58	1.22	2.63	1.20
Force Protection						
Op vehicle/personnel checkpoint	2.90	1.28	3.25	1.29	3.00	1.28
Conduct intrusion prevention	2.81	1.16	3.11	1.15	2.90	1.16
Construct non-explosive approach	2.70	1.29	3.00	1.50	2.79	1.35
Conduct surveillance	2.53	1.18	3.32	1.16	2.78	1.22
Conduct urban patrol	2.80	1.05	2.72	1.67	2.77	1.25
Visually id vehicles & aircraft	2.61	1.16	2.95	1.43	2.72	1.25
Process captured/suspicious material	2.60	0.88	2.90	1.25	2.70	1.01
Id/secure/etc. CI/EPWs/etc.	2.55	0.93	2.95	1.28	2.67	1.05
Conduct ECP ops	2.51	1.30	3.00	1.30	2.66	1.31
Conduct crowd control	2.49	1.08	3.00	1.06	2.64	1.09
React to man-to-man contact	2.61	1.06	2.58	1.17	2.60	1.09
Establish & occupy OP	2.43	1.19	2.80	1.32	2.55	1.24
Recognize & proc intelligence items	2.28	0.88	3.12	1.11	2.53	1.02
Urban Ops, Camouflage						
Move over obstacles (dismounted)	2.70	0.93	3.28	1.18	2.87	1.03
Search/secure bldg/room	2.77	1.13	2.82	1.38	2.78	1.19
Practice noise/light/etc disc.	2.60	1.20	3.05	1.20	2.74	1.21
Conduct bldg assaults	2.51	1.10	3.21	1.05	2.70	1.12
Select/etc.fighting positions	2.50	1.11	3.11	1.08	2.67	1.13
Perform fire/maneuver during urban ops	2.56	0.93	2.83	1.15	2.64	1.00
Execute bldg breach	2.41	0.96	3.07	1.00	2.59	1.00
Prep individual/crew weapons positions	2.45	1.11	2.89	1.41	2.58	1.21
Prep defensive pos range card	2.41	0.91	2.68	1.21	2.51	1.03
Clear fields of fire	2.40	0.88	2.58	1.22	2.45	0.99
Camouflage equipment	2.24	0.98	2.67	1.32	2.38	1.11
Camouflage self	2.32	0.93	2.29	1.23	2.31	1.03
Navigation, Communication, Call for Fires						
Setup/op tactical radios	2.49	1.08	3.81	0.93	2.92	1.20
Navigate from one pt to another	2.52	1.09	3.57	1.12	2.86	1.20
Deter direction/location	2.55	0.92	3.20	1.36	2.76	1.11
Perform voice communications	2.23	1.24	3.73	1.24	2.73	1.42
Locate target by grid coordinates	2.42	1.10	3.30	1.13	2.69	1.17
Call for/adjust indirect fire	2.18	0.98	3.25	1.24	2.48	1.16
Construct field exp antennae	2.16	0.93	2.94	1.06	2.42	1.03
Use visual signalling tech	2.15	1.00	2.65	1.35	2.30	1.13

	Incumbent		Supervisor		Total Sample	
	M	*SD*	*M*	*SD*	*M*	*SD*
Weapons, Grenades, Mines,						
M16/M4	3.06	1.13	3.73	1.16	3.25	1.18
M9	2.95	1.04	3.44	1.46	3.11	1.20
Light machine guns	2.57	1.13	3.10	1.48	2.74	1.27
M2	2.49	1.01	3.11	1.41	2.70	1.19
Night vision sights	2.43	1.12	3.10	1.41	2.67	1.26
Employ NLW	2.39	0.92	3.27	1.27	2.64	1.09
Shotgun	2.24	1.12	3.55	1.13	2.60	1.26
M19	2.53	1.19	2.72	1.56	2.60	1.32
M203	2.27	1.02	2.90	1.33	2.49	1.17
Employ/recover antitank mines	2.33	0.88	2.75	1.22	2.45	0.99
Employ/recover antipersonnel mines	2.29	1.24	2.79	1.31	2.44	1.27
Employ demolitions	2.24	0.99	2.60	1.51	2.33	1.13
M136	2.10	0.97	2.71	1.49	2.26	1.15
Hand grenades	2.12	0.92	2.50	1.50	2.23	1.13
Supervise, Lead, Train Others						
Conduct inspections	2.61	1.16	3.70	1.22	2.94	1.28
Train subordinates	2.63	1.12	3.65	1.09	2.93	1.20
Counsel subordinates	2.56	0.96	3.60	0.99	2.89	1.08
Prepare for/conduct PMT	2.60	1.16	3.20	1.28	2.79	1.22
Conduct Perform-oriented training	2.63	1.16	3.14	1.24	2.78	1.20
Prepare for/conduct drills	2.45	1.00	3.40	1.19	2.75	1.14
Conduct/lead drill/ceremonies	2.58	1.01	2.90	1.48	2.68	1.18
Prepare training outline	2.39	0.95	3.05	1.32	2.59	1.11

Note. Incumbent n = 28 - 53, supervisor n = 10 - 22.

Table G.2. Mean Test Emphasis Ratings for Task Statements

	Incumbent		Supervisor		Total Sample	
	M	*SD*	*M*	*SD*	*M*	*SD*
First Aid						
Evaluate Casualty	3.33	1.11	3.77	1.11	3.46	1.14
Request MEDEVAC	2.81	1.27	4.23	0.97	3.23	1.36
Perform FA - heat injuries	3.26	1.09	3.14	0.99	3.23	1.06
Perform FA - bleeding extremities	3.06	1.18	3.55	1.01	3.21	1.14
Perform FA - open wound	3.02	1.01	3.41	1.26	3.14	1.10
Practice preventive med	2.88	1.14	3.67	1.02	3.11	1.14
Put on field dressing	2.90	1.04	3.59	1.01	3.11	1.08
Initiate IV	2.86	1.34	3.63	0.76	3.10	1.24
Perform FA - shock	2.96	1.06	3.09	1.11	3.00	1.08
Perform FA - cold injuries	3.00	1.10	2.90	0.89	2.97	1.07
Perform FA - burns	2.87	1.12	3.18	1.14	2.96	1.15
Transport casualty	2.67	1.23	3.64	1.29	2.96	1.33
Perform mouth-to-mouth	2.73	0.99	3.23	0.92	2.88	1.01
Perform FA - fracture	2.79	0.99	3.05	1.20	2.86	1.13
Evacuate from vehicle	2.81	1.11	2.90	1.34	2.84	1.19
Perform FA - throat obstruction	2.83	1.13	2.82	1.22	2.82	1.17
Recover remains	2.52	1.34	3.05	1.32	2.69	1.34
Buddy Aid	2.66	1.07	2.50	1.19	2.61	1.08
NBC Protection & Decontamination						
Decontaminate self	2.85	0.99	2.71	1.05	2.81	0.99
React to attack/hazard	2.84	1.06	2.63	1.01	2.79	1.03
Exchange MOPP	2.88	1.03	2.44	1.10	2.77	1.09
Put on/wear MOPP	2.88	1.07	2.45	1.15	2.76	1.11
Detect chemical agents	2.75	0.99	2.67	1.14	2.73	1.09
Cross contaminated area	2.82	1.04	2.44	1.15	2.72	1.07
Maintain mask	2.72	1.24	2.67	1.11	2.70	1.18
Decontaminate equip	2.71	1.02	2.44	1.15	2.64	1.04
Vehicle & Convoy Tactical Ops						
Perform vehicle PMCS	3.15	1.01	4.18	0.66	3.45	1.03
Secure vehicles at halt	3.19	1.00	4.00	0.98	3.43	1.06
Prepare for convoy	3.08	0.97	4.23	0.75	3.41	1.07
Perform exit/enter battle drill	3.08	1.08	4.18	0.85	3.41	1.12
Perform forced stop battle drill	3.08	1.14	4.05	1.21	3.37	1.23
Perform break contact drill	2.88	1.22	4.23	0.87	3.28	1.26
Drive vehicle	2.91	1.19	3.95	1.13	3.25	1.26
Provide convoy security	2.81	1.12	4.00	0.93	3.16	1.24
Occupy floating rally pt	2.80	0.98	3.65	1.09	3.06	1.07
Threat ID & Reaction						
ID threats visually	3.43	1.31	4.18	0.80	3.66	1.22
React to contact	3.20	1.21	4.18	0.85	3.50	1.22
React to ambush (mounted)	3.21	1.30	3.91	1.11	3.42	1.27
Move under direct fire	3.15	1.21	3.68	0.95	3.31	1.16
React to ambush (dismounted)	3.09	1.21	3.82	0.85	3.31	1.20
Mark/report UXO	3.15	1.15	3.36	1.00	3.22	1.11
React to sniper	2.86	1.35	3.82	0.91	3.15	1.29

	Incumbent		Supervisor		Total Sample	
	M	*SD*	*M*	*SD*	*M*	*SD*
Locate mines by probing	3.02	1.25	2.89	1.15	2.98	1.24
Conduct self-extract	2.94	1.32	3.05	1.32	2.97	1.33
Force Protection						
Op vehicle/personnel checkpoint	3.17	1.29	3.77	1.11	3.35	1.29
React to man-to-man contact	3.16	1.24	3.48	1.33	3.25	1.30
Visually id vehicles & aircraft	3.12	1.29	3.32	1.25	3.18	1.27
Conduct urban patrol	3.08	1.24	3.36	1.62	3.16	1.40
Conduct intrusion prevention	2.94	1.24	3.64	1.00	3.15	1.21
Recognize & proc intelligence items	2.81	1.13	3.81	0.93	3.12	1.17
Conduct ECP ops	2.75	1.44	3.73	1.08	3.04	1.39
Construct non-explosive approach	2.85	1.21	3.41	1.30	3.03	1.26
Conduct surveillance	2.79	1.36	3.55	1.01	3.03	1.27
Id/secure/etc. CI/EPWs/etc.	2.84	1.09	3.32	1.46	2.99	1.22
Process captured/suspicious material	2.78	0.99	3.41	1.14	2.97	1.07
Establish & occupy OP	2.79	1.30	3.36	1.18	2.97	1.27
Conduct crowd control	2.71	1.22	3.29	1.01	2.89	1.19
Urban Ops, Camouflage						
Search/secure bldg/room	3.22	1.29	3.37	1.26	3.26	1.28
Prepare individual/crew weapon positions	3.00	1.31	3.57	1.16	3.17	1.26
Conduct bldg assaults	3.00	1.26	3.58	0.96	3.17	1.21
Practice noise/light/etc disc.	2.90	1.30	3.68	0.78	3.14	1.22
Perform fire/maneuver during urban ops	2.94	1.09	3.48	1.03	3.10	1.09
Select/etc.fighting positions	2.92	1.06	3.43	0.93	3.07	1.03
Execute bldg breach	2.84	1.21	3.55	1.05	3.06	1.20
Move over obstacles (dismounted)	3.00	1.09	3.19	1.21	3.06	1.10
Clear fields of fire	2.90	1.07	3.23	0.92	3.00	1.03
Camouflage equipment	2.80	1.08	3.00	1.05	2.86	1.08
Prepare defensive pos range card	2.65	1.09	3.00	1.00	2.76	1.05
Camouflage self	2.63	1.04	2.90	0.97	2.71	1.00
Navigation, Communication, Call for Fires						
Navigate from one pt to another	3.06	1.27	4.00	0.77	3.34	1.23
Locate target by grid coordinates	3.10	1.17	3.68	1.04	3.27	1.19
Setup/op tactical radios	2.92	1.32	3.86	0.89	3.21	1.29
Deter direction/location	2.92	1.21	3.82	1.01	3.20	1.24
Call for/adjust indirect fire	2.80	1.23	3.62	1.16	3.04	1.27
Perform voice communications	2.65	1.24	3.82	0.91	3.01	1.25
Use visual signalling tech	2.75	1.27	3.29	1.06	2.90	1.22
Construct field exp antennae	2.54	1.31	3.55	0.83	2.85	1.24
Weapons, Grenades, Mines,						
M16/M4	3.45	1.04	3.95	1.09	3.60	1.09
Night vision sights	3.14	1.23	4.14	0.65	3.47	1.21
M9	3.11	1.32	3.95	1.10	3.38	1.33
Light machine guns	3.00	1.28	4.05	0.80	3.32	1.29
M19	3.05	1.14	3.75	1.07	3.27	1.17
M2	2.85	1.43	4.10	0.91	3.23	1.43
Shotgun	2.83	1.35	3.71	1.16	3.09	1.39
M203	2.71	1.16	3.76	0.70	3.05	1.16

	Incumbent		Supervisor		Total Sample	
	M	*SD*	*M*	*SD*	*M*	*SD*
Employ NLW	2.74	1.20	3.65	0.93	3.02	1.21
Hand grenades	2.72	1.23	3.19	1.25	2.87	1.26
M136	2.42	1.24	3.68	1.00	2.78	1.32
Employ/recover antipersonnel mines	2.62	1.31	2.89	1.20	2.70	1.26
Employ demolitions	2.49	1.18	2.88	1.20	2.60	1.20
Employ/recover antitank mines	2.53	1.09	2.76	1.35	2.60	1.18
Supervise, Lead, Train Others						
Conduct Perform-oriented training	3.00	1.03	4.00	1.02	3.31	1.14
Prepare for/conduct PMT	2.85	1.15	4.10	0.77	3.24	1.25
Conduct inspections	2.83	1.37	4.10	0.83	3.22	1.36
Train subordinates	2.86	1.15	4.05	0.80	3.21	1.21
Prepare for/conduct drills	2.90	1.23	3.86	0.89	3.20	1.19
Prepare training outline	2.71	1.26	3.95	1.00	3.10	1.31
Counsel subordinates	2.56	0.97	3.95	1.16	2.99	1.22
Conduct/lead drill/ceremonies	2.68	1.19	3.52	1.25	2.93	1.28

Note. Incumbent n = 39 - 53, supervisor n = 16 - 22.

Table G.3. Mean Supervisor Test Emphasis Ratings for Knowledge Statements

	M	*SD*
Rules, Regulations, Laws		
Rules of Engagement	4.10	1.18
Universal Code of Military Justice	3.86	1.20
Laws of War	3.76	1.37
Geneva Convention	3.71	1.31
Code of Conduct	3.29	1.55
Requirements of Environ Regulations	3.05	1.50
Army Policies & Practices		
Interactions with Media	4.00	1.00
Physical Fitness Stnds	3.76	1.14
Drug & Alcohol Abuse	3.62	1.20
Sexual Harassment	3.24	1.22
Equal Opportunity	3.19	1.36
Homosexual Policy	3.15	1.23
Leadership Procedures		
Leadership duties	4.48	0.68
Steps of TLP	4.24	0.70
Roles of NCO in training	4.14	0.79
BE, KNOW, DO	4.10	0.83
Policies chain of command	4.05	0.86
Steps of decision-making	4.05	1.16
Principles of discipline	3.90	1.09
Army History, Customs, Values		
Customs and courtesies	3.81	0.93
History of NCO	3.67	1.02
Army values	3.62	1.07
Army history	3.48	1.17

Note. $n = 21$.